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DISEASE AND DIAGNOSIS.*

BY

HENRY HEAD, M.D., F.R.S.

THE war has drawn an indelible mark across the history of our times. Much that before seemed possible has now become incredible and our beliefs have been shaken to their foundations. As the ancient edifice came tumbling about our ears, we wondered at the structural enormities revealed in its ruins. With the passage of time additions had been made to the original structure, which were founded on the flimsiest basis, and we are filled with astonishment that they could have held together so long.

The fundamentals of medicine have not escaped the rude shocks of war. Men's belief in the old order has been shaken, and there is a wide demand for a restatement of current values. The young are not content to accept our conventional explanations, and their curiosity is no longer satisfied by names and phrases. Contentment with words that are in many cases nothing more than a restatement of the problem in bastard Latin or Greek, was one of the most remarkable characteristics of the last quarter of a century.

Nowhere is this more obvious than in the nomenclature of disease. As soon as a name had been given to the morbid condition, a "diagnosis" was supposed to have been made, and teacher and students purred with satisfaction. After careful stethoscopic examination the conclusion might be reached that the patient suffered from "mitral regurgitation"; on this there was much talk of how one flap of the valve was based upon muscle, the other on the less shifting fibrous tissue of the septum. Incidentally some one of the participants in the discussion might mention that the pulse was irregular, but this was accepted as a not uncommon accompaniment of "mitral disease."

Suppose some young student, innocent of the corrupt jargon of the hospital, were to ask, "What is the matter with the patient?" his curiosity would be checked by the scornful reply "mitral disease." But if he had been grounded in physiology, the science of function, or was one of those candid souls who are gifted with the power of seeing through words, he would recognize that "mitral disease" is a static condition. What troubles the patient is not incompetence of the valve, but some disturbances of function more or less directly associated with this destructive change. Finally he would recognize that some patients with mitral regurgitation show vital disabilities of a grave order, others do not seem to suffer to any material extent, and that this difference is due solely to the extent to which the function of the heart is disordered.

The human body is a complicated machine which has been developed throughout the ages to meet the stresses and strains of the surrounding universe. Its structure has been put together out of the lowliest materials; Nature is interested in function, not in structure. In the course of development the most unlikely transformations occur, provided they lead to the production of an organ that fulfils a useful function. Nature demands solely that it shall work adequately. The internal ear in man is evolved by the transformation of the headward portion of the balancing apparatus of the fish. But this organ came into existence in a free swimming vertebrate; it was adapted to pick up vibrations in the surrounding water, and the ear of man is therefore provided with a special fluid upon which aërial waves must act before they can give rise to sensation. The old method is retained because, by a slight transformation, the organ can be made to function in air. Structure is anchored in the past, and development occurs by its adaptation to higher functions.

Disease is disordered function. The life of man depends upon the orderly sequence of a series of processes, and any disturbance of these functions leads to discomfort, to ineffective action, or even to death. The patient, like Mother Nature, is primarily interested in his functional capacities.

From mental inertia the physician has drifted into the habit of considering morbid structure rather than abnormal function. How often has it been our lot to listen to some teacher, expounding over the bed of a patient his reasons for believing that the kidney was small and red; and yet at the *post-mortem* table, face to face with palpable and visible facts to the contrary, he would explain that he was justified, under the circumstances, in his opinion. But it did not enter his mind that he had no more evidence that the kidney was small and red than that it was of any other size or colour. He had not tested its function. He knew there was albumin in the urine, and he had taken the specific gravity of a sample gathered with a carelessness that would not be tolerated in any other analytical procedure. For the estimation of the amount of urine passed in twenty-four hours is left to the nurse, and the measurement is not uncommonly made during the dark hours, when her accuracy, never very great, is reduced to its lowest ebb. No attempt had been made to discover the power of the kidney to secrete the various elements of the urine, and structural changes were confidently predicted without a preliminary determination of disordered function.

In many departments of medicine the old order was tottering before the war. Fortunately for the history of medicine in this country, the majority of medical men were compelled to enter the army and to work under command. As a profession we are essentially individualistic, and, ever since the days when medicine was freed from the domination of Galen and Hippocrates, the exercise of authority in matters of thought excites our hearty antagonism.

No more perfect method for arousing this healthy reaction could have been devised than the List of Diseases issued for the use of the army under which we have all worked since the beginning of the war. I am not going to waste this evening in stories of the humorous possibilities of this little brown book.* One of my old house-physicians had the temerity to recognize auricular fibrillation and was reprimanded by his commanding officer for choosing a diagnosis that could not be discovered by the sergeant amongst the official list of diseases of the ear. I have no doubt that all of you could cap this anecdote with even more laughable episodes.

But let us consider rather why this nomenclature of diseases forms a relic of a past epoch in medicine, and merits a prominent position on the shelves of an anthropological library, as evidence of an extinct phase of human thought.

First, it is based on no coherent principle. Sometimes the "disease" is named after a change in structure that can be discovered by the most careful microscopical evidence only, long after the diagnosis has ceased to be of interest to the sufferer or his friends. Thus diseases of the myocardium are to be classified under "inflammation, degeneration, atrophy, hypertrophy, dilatation"; but there is not a word as to any disorder of function except the fantastic D.A.H. Sometimes the classification depends on the event; if the patient dies the endocarditis is "malignant" or the anaemia "pernicious."

For another series of diagnoses the most elaborate bacteriological examinations are necessary, as, for example, "paratyphoid A" or "paratyphoid B," whilst in other cases that vague conscience-anodyne "influenza," or even the colloquial "sore throat," are sufficiently precise.

Think, too, of the intellectual confusion that can tolerate "tremor," "paralysis agitans," "headache," and "hyperaesthesia" as correlative terms.

Mental medicine has always sinned grossly in this respect, and the permissible diagnoses under this heading are based indifferently on the cause, on the mental defect, or on changes in conduct. "Alcoholic" insanity reveals nothing beyond the supposed cause; the patient may be excited, depressed, confused, or full of delusions. On the other hand, "dementia" is an expression of loss of function, which may or may not be accompanied by positive manifestations of abnormal activity. "Impulsive" insanity usually means that the trained attendant thinks he has to deal with a "nasty" patient, whilst "moral" insanity is a police court diagnosis.

Apart from this acceptance of diverse and contradictory categories of belief, so common in all primitive cultures, this nomenclature fails to recognize the essential factors of disease. A morbid state depends first on the biological

* Remarks made at a social evening at the Royal Society of Medicine on Wednesday, March 12th.

* "List of Diseases: Printed in the order in which they appear in the Annual Report on the Health of the Army."

cause, and secondly on the site of its incidence. This is evident in such a disease as syphilis of the central nervous system. The activity of the *Spirochaeta pallida* is governed by certain laws on which depend the character and life-history of the infection; but the situation of its destructive activities determines the nature of the morbid manifestations. All attempts to separate the various forms of syphilitic activity in the central nervous system into different "Diseases" has failed, and such terms as "general paralysis of the insane" and "tabes dorsalis" have been relegated to their proper position as shorthand expressions for groups of signs and symptoms. The diagnosis of "general paralysis" states nothing more than that the most significant part of the syphilitic affection has fallen on the higher centres; it tells us nothing as to whether the meninges, vessels, or cortical cells have borne the heaviest brunt of the destructive process. "Tabes dorsalis" indicates that the posterior columns have been attacked. To say that a patient who shows primary optic atrophy is suffering from "tabes," although his ankle and knee jerks are normal and he has no disturbance of the functions of the posterior columns, reveals a complete want of comprehension of the meaning of disease.

Such fundamental confusion between cause and effect, structure and function, leads inevitably to defective understanding of the significance of diagnosis. True diagnosis is an orderly procedure in which all the faculties of the mind, logical and instinctive, play their part. But this is a laborious exercise and requires more time than can be given by the physician or surgeon either on his visits to the wards or in fashionable practice.

Search is made, therefore, for some infallible sign that will lead with rapidity to the desired haven of a name and render further thought unnecessary. Happy the man who can not only find such a lodestar, but can compel his fellows to attach to it the name of its fortunate discoverer.

Scientifically, however, such signs are nothing but a statement of the problem awaiting solution. Some of them reveal the site of the structural affection; some of them form a group of symptoms and signs of diverse origin. In both cases the fundamental cause of the morbid manifestations must be sought by further analysis. Thus "hunger pain" and its concomitant manifestations are a syndrome that may be based on chemical disturbance in the gastro-intestinal tract, or may be associated with gross structural changes in such diverse organs as the duodenum, appendix, or gall bladder. "Epilepsy," "asthma," and "angina pectoris" are not diagnoses; they are names for certain explosive outbursts which are harmful to the patient. Each may be based on the most diverse causes, and there may be nothing in the form of the attack to betray its origin. We cannot tell by looking at the face of a clock, which is running fast, to what structural change this abnormal action is due. The scientific physician recognizes that the convulsive seizure, the paroxysmal dyspnoea, or the breast pain state the problem he has to solve, and his clinical curiosity is not satisfied by calling them "epilepsy," "asthma," and "angina pectoris."

Reasonable diagnosis begins with an accurate determination of the morbid phenomena by every means in our power. Attention must not be fixed exclusively on one part or on one system of the body. The mental states induced by abnormal conditions of the heart and lungs are as fundamental as the revelations of the stethoscope; they are more important to the comfort of the patient.

When we have gathered together our observations they must be translated into terms of physical states. We must "localize" the original site of the morbid manifestations. Thus, when the great toe moves upwards on scratching the sole of the foot, we know that the pyramidal tracts are affected, and a certain combination of auscultatory signs points to narrowing of the mitral valve. Physical signs mostly reveal the situation of the lesion. They are the static evidence of disease.

Then we must marshal the evidence of disordered function. This aspect of medicine has been sadly neglected. But within the last few years attempts have been made to evolve tests for functional efficiency that will yield measurable results. Opinion is valueless; the results of each observation must be given in measured and comparable terms. In this respect the workers in cardiology have given us an admirable example.

Finally, however, the cause must be sought for, both the static and dynamic features of the disease. It is not sufficient to say that a patient is suffering from pneumonia; we must attempt to discover the essential reason for the inflammatory changes in the lung. This is frequently a laborious process, and requires considerable technical training. The physician and surgeon, having neither the time nor necessary experience, have come to rely entirely on the reports of laboratory workers. The physician does not call in an outside expert to auscult the chest. But the blood, the gastro-intestinal contents, the urine, and other secretions, together with the whole infective problem, are handed over to those who are not permitted to see the patient. Worse still, the laboratory rarely if ever sees the physician. How many clinical teachers are there who can evaluate a quantitative Wassermann reaction or appreciate the true significance of a gastro-intestinal analysis?

No man can be expected to become an expert in all the multifarious physical and chemical procedures which go to make up a scientific diagnosis. My contention is that the clinical teacher should appreciate that his special knowledge is one link only in the search for the cause of those disturbances of function or changes in structure we call disease. He must learn to understand the methods of his co-workers and not expect to be an oracle, divinely irresponsible, emitting pragmatical opinions.

Many diagnoses are based on no method of orderly reasoning; they are of no more intellectual value than "spotting a winner" in a horse race. Such guesses may bring financial reward to their maker, but add little to his intellectual credit.

No one is more wedded to theory than the so-called "practical" physician. He knows the "cause" of each disease and the source and nature of the responsible toxin. He enters the sick room armed with vaccines, organic extracts, serums and antitoxins, preferably polyvalent; enzymes and even hormones form part of his armamentarium. He shows a bold front where Science moves with bowed head and bated breath.

But the true clinician is a very different figure. He walks humbly from one bedside to another, listening to each patient's story and noting the diverse changes in function which form the disease he is called upon to treat. Much that he sees does not fit with what he has been taught. It breaks his heart to know that he has neither the means nor the time to discover the significance of what he sees. To whom shall he turn for counsel?

This is the place of the man of science. It should be the business of the great teaching centres to expend their huge powers and vast opportunities to correlate morbid phenomena. Clinical diagnosis should be a by-product of scientific investigation. It is impossible to expose every patient to exhaustive examination, nor would it serve any useful purpose to do so. But simple tests applicable to clinical use must be calibrated by rigid scientific investigation. Once their value has been determined the physician knows exactly how far they will lead him. In lesions of peripheral nerves, all that is required for sensory diagnosis can be obtained with a piece of cotton-wool and a pin, provided the significance of these empirical tests has been previously determined by laborious scientific observations. So with the functions of any organ such as the kidney; long and elaborate researches are necessary to produce tests applicable to clinical use. The polygraph and electrocardiograph have taught us the significance of circulatory signs that can be appreciated by every medical man.

You can bring down giants with a sling and a stone if you know how to use them; Saul's armour is cumbersome wear for the daily battle with disease. But, in order that medicine should be endowed with simple and measurable signs applicable to practice as a whole, men must devote their lives to the investigation of special problems of disease. This cannot be done to any considerable extent under the present conditions.

Let us clarify our notions of disease, and bear in mind that a name is not a diagnosis. The era of penny-in-the-slot medicine is at an end. The word "epilepsy" should not lead instinctively to the exhibition of bromide, nor the label "angina pectoris" cover a box containing amyl nitrite. Because a condition is produced by a micro-organism it cannot be inevitably removed by a vaccine. Widespread morbid manfestations are not of necessity due

to a deviated nasal septum, a kink in the intestine; or microscopical changes in the ovary.

"The letter killeth but the Spirit giveth life." Let us recognize that the old order has passed away from medicine, and the reign of the New Spirit has begun.

MEDICAL AND SURGICAL WORK AS A PRISONER OF WAR.

BY

ALEXANDER T. I. MACDONALD, M.D., D.P.H.,

TEMPORARY CAPTAIN R.A.M.C.

IN theory the latter part of the title of this article is perhaps not strictly correct. Under the Geneva Convention medical personnel taken by the enemy are not prisoners of war in the ordinary sense. They should be detained only so long as they are required to look after their own sick and wounded. But experience has taught us in this war not to place reliance on the binding force on our opponents of any international agreement to which they were parties, and in practice we found that this standpoint was not wanting in justification.

These notes are not intended to provide any comprehensive survey of German medical organization and work among the prisoners of war. They are rather an account, albeit somewhat fragmentary, of my individual experiences, which throw some light on the vaunted "efficiency" of our opponents, and show how their methods differ from our own.

The writer was taken prisoner at an advanced dressing station in France, along with a colleague, in March, 1918, the number of wounded urgently claiming attention at the time precluding any thought of getting away, even had the intense barrage permitted it. We had been working under difficult conditions at high pressure for some little time before the Germans made their appearance. Our dressing station was quite a new one and in apple-pie order on the morning of the attack. The windows of oiled silk material were the first things to be knocked out. During the preliminary bombardment with high explosive and gas shells they were quickly torn to ribbons, and they had to be replaced by pieces of blanket. Then when the barrage rested on the bank under which our three huts sheltered, our newly hung doors played us false and collapsed with a crash under the concussion of the shell bursts, allowing cascades of earth to enter the dressing hut from above. The blankets we had nailed over the windows were also blown off, and the earth entered these also. The carrying of patients who had been dressed into the "evacuation" hut was at this time rather an unpleasant business. Two bombs were thrown into this hut by the Germans as they approached the sunken road from above before they recognized that they were dealing with a dressing station.

We were held prisoners all day in our dressing station, treating our own and German wounded alike. Two men of the German medical corps were the only medical personnel with us during most of the time apart from a sergeant and two men of our own staff. The remainder of our own non-commissioned officers and men—dressers and stretcher-bearers—were ordered back immediately, and I am sorry to say that some of them were killed during the tramp over the battlefield through the German lines. Of the remainder, a number were kept in the captured ground for days, burying dead and making roads, living without shelter on the most meagre allowance of food. The two German *Sanitäts* repeatedly brought their wounded compatriots to us for dressing or advice. We injected antitetanic serum, as in the case of our own wounded, and though the operation was regarded at first with suspicion it was submitted to for the most part.

There seemed to be no medical officer with the German battalion, but only these men of the medical corps, or *Sanitäts* personnel. They carry a small bag of dressings containing among other things a hypodermic syringe and solution of morphine. The former is fitted into a bottle containing absolute alcohol to sterilize the needle. Stretcher-bearing, on our part of the line at least, was rather a crude operation as carried out by the Germans. A ground sheet, slung on a pole borne on the shoulders of two bearers, contained the unfortunate patient, whose sufferings, if he had a fracture, must have been extreme. Other stretcher substitutes were also used—duckboards, for example. The stretchers used by the Germans further back are heavier than ours, but have certain advantages in the way of support for head, hinges for folding, and sliding handles; the two latter modifications enabled them to be packed in small space.

The German medical officers remain relatively far back, at the *Verbandplatz* or dressing station, and are attached to the regimental unit which corresponds more to our brigade. Thus we did not see a German medical officer at our advanced dressing station until nightfall, and he requested us to "carry on" while he busied himself with some food. He and two younger medical officers were much impressed by the completeness of our equipment and also by the quality of the dressings.

Going back in the dark we were taken to the *Verbandplatz*, a deep dug-out some four kilometres back. We wandered round the ruined village outside which it was situated for an hour and a half trying to find it, for our guide's bump of locality was but poorly developed. When we eventually reached it we were passed on elsewhere, a process which seems to have attained a high state of perfection in the German army. The meagre provision of surgical material at this station struck us forcibly. Splints consisted of pliable wire—two thick pieces joined ladder fashion by thinner pieces. This, while readily adaptable for fractures of bones of arm and forearm, is far too pliable when applied to the thigh and leg, as it often is. Another splint, Volkmann's iron gutter, is available for fractures of the thigh, but it does not secure extension or immobility in transport as does our own Thomas's splint.

Marching further back from this dressing station we passed the long line of German transport ready to move forward. Amidst a wonderful conglomeration of vehicles, including a brougham and pair, open landaus, Russian droshkies, we noticed the ambulance transport, consisting of small wagons each capable of taking two stretcher cases, drawn by two ponies, presumably of Russian or Rumanian origin, and each flying a small Red Cross flag. Thus it will be seen that the Germans adhere to the system of separating bearers and transport in their ambulance organization in the field. The *Feldlazarett* takes the place of our old field hospital.

Motor ambulances were not seen so far forward as they are in our own lines. Their deficiency in numbers is to some extent made up by attaching to each a string of two-wheeled trailers. The jolting in these must be hard on the patients.

After a tedious march spread over two days, and a dolorous experience of front line cages and prison lagers, we went for duty in a hospital for prisoners of war attached to one of the Bavarian *Kriegslazaretts*. The section for prisoners was established in a portion of a French hospital erected on the pavilion system. This hospital had been nearing completion at the beginning of the war. We found it full to overflowing with British wounded who were urgently in need of attention, as they had received no further dressing than the first. They lay on the beds, on stretchers, and on palliasses on all the available floor space in the wards above ground, as well as in the basement cellars. Our operating and dressing room was, to begin with, very dirty and sparsely furnished. A small coal stove served for the suppy of hot water and the sterilization of instruments. A wash-hand basin was already fitted with a supply of cold water only, but as the waste pipe had not been fixed we had to run waste water into a bucket. The instruments provided were old, few in number, and partly denuded of plating; but this was remedied after two months or so as a result of a request to the *Chef-arzt*, who provided a set suitable for ordinary purposes. A gas stove was fitted later and the provision of electric light was completed.

After a time two sisters were sent to the hospital for duty, one of whom spoke English with some fluency, having spent a year in America. They made a considerable improvement in the arrangement and cleanliness of the theatre, confining themselves largely to work in it. The most rigid economy was entailed in the use of surgical materials. Sutures were of silk or plain catgut. Soap for washing hands was hard to obtain and varied much in appearance and cleansing powers. Soap powder with

sand, powdered washing soda, cakes made of a sort of clayey earth and of fine gritty material admixed with soap were supplied to us at various times, but sometimes none was available, and we went through the formality of hand-washing with hot water alone, trusting to prolonged immersion in sublimate solution to afford a degree of surgical cleanliness. For the latter reason, extensive use was made of dissecting and bullet forceps in doing dressings, and the wounds were not touched with the fingers as a rule. For the first month or so in the hospital we had long spells of hard work, for the most part draining wounds and compound fractures and removing foreign bodies. Rubber drainage tubes were scanty and were not supposed to be cut if not of suitable length. The bandages used were chiefly of paper. For securing splints, roller bandages made from lace curtains or cotton dress materials were used, albeit of necessity sparingly. These were collected from time to time, washed, and rolled again for use. A substitute for cotton-wool was provided in the shape of *Selkstoff*, made from paper. The better qualities of this were soft and absorbent, but the poorer, harder qualities were very bad substitutes. Benzol (substitute) was largely used in the process of preparing the skin, with tincture of iodine as a final application. For cleansing open wounds irrigation with diluted hydrogen peroxide was employed almost exclusively. Moist dressings of dilute solution of aluminium acetate on lint covered with jaconet were used for cellulitis. I endeavoured to obtain Dakin's solution for dressings, and succeeded in getting it for use in a case of gas gangrene.

There was no shortage of anaesthetics at the two hospitals at which I worked. Chloroform, ether, and ethyl chloride were available. In many German hospitals the latter is administered by the sisters for certain dressings. The patient's arm is raised at right angles to the body, and the administration of the anaesthetic ceases directly after the arm drops.

I may add to what I have said regarding splints that in fractures of the femur extension from a clamp applied to the skin over the lower end of the bone just above the condyles on either side is much employed by the Germans. So far as one could judge the skin over the points of pressure often became septic and sloughed, and the end results, seen later at another hospital, were marked by great deformity and shortening.

It is, I think, a testimony to the value of injection of antitetanic serum that we had few cases of tetanus among many hundreds of wounded. Four cases developed in succession in one ward. Two cases of gas gangrene were admitted, but no other cases were met with during five months.

Among the medical cases a variety of nephritis, and a condition (the result of slow starvation) characterized by weakness, shortness of breath, emaciation, oedema of the feet and legs, and anaemia, was frequently met, as was influenza, often followed by pneumonia. The latter occurred as a primary disease, too, and in the poor starved men, who sometimes remained at their camps without treatment for days before admission to hospital, was often rapidly fatal. Diarrhoea and dysentery were rife, especially the former. Impetigo, furunculosis, and scabies were, as might be expected, relatively common. The conditions first mentioned were especially noticeable among the newly captured men from the working camps around, who were not only starved but also dirty and ill clad, having disposed of part of their clothing for food. Many of these men before coming back to those prison camps had worked at the front in shelled areas, sleeping in shell holes with no means of washing, and on the poorest of food doled out in a fashion which would have delighted the heart of Mr. Squeers. They were not, of course, in receipt of Red Cross parcels, and their condition was very different from that of the older prisoners in the camp next to our hospital, who had been brought from Germany, and who had parcels with food, soap, and good warm clothing supplied to them from home.

The drugs, supplied chiefly in tablet form, were of good quality—acetyl salicylic acid, veronal (substitute), pyramidon, morphine, dionine, ipecacuhana and opium powder, "solvent tablets" (ammonium chloride and extract of liquorice), bismuth subgallate, subnitrate, and carbonate; sodium bicarbonate, urotropine (substitute), theobromine salicylate (diuretin), and so on. Great reliance was placed by the Germans on the injection of oily solution of camphor as a stimulant.

Hospital Dietary under three Main Heads.

Form 1 (ordinary diet).—Breakfast: Black bread and coffee. Dinner: Half a bowl of vegetable or macaroni soup containing a small quantity of meat. On Friday this was replaced by boiled rice with a spoonful or two of dried fruit. Tea: Black bread with jam, "tea," or "coffee." Supper: Black bread, with occasionally a small piece of sausage, or bread and meal gruel.

The black bread was accountable for much diarrhoea. Often it was sour and contained a percentage of quite indigestible irritating gritty material. The latter came partly from adherent sawdust in which the loaves were rolled on baking. Coffee and tea were substitutes for the real article, of course.

Form 2.—This diet was similar to Form 1, except that three thin slices of white war bread with margarine were given in lieu of black, and a rather more digestible kind of soup was provided. In our hospital extras, such as a small amount of milk, an egg, or a small glass of wine, could be ordered. The eggs, however, were often bad, and the supply ceased during the summer.

Form 3.—This diet was supposed to be suitable for diarrhoea cases. It consisted of thin gruel, purée of potatoes, etc.

The white bread given was insufficient in quantity, and patients who became more fit usually asked to go on Form 1, even though the bread was black, for the sake of the larger quantity obtained.

The beds in the wards were of wood and roughly constructed. The mattresses were made of paper sackcloth filled with wood shavings, over which a sheet was placed. When the wood shavings became broken and flattened out by the patient's weight the bed was extremely hard, and bedsores were almost inevitable in helpless patients in spite of prophylactic care of the skin. The only air ring cushion in the hospital was leaking beyond repair and no other rubber cushions or water beds could be obtained. A shift was made with rings of straw covered by bandage.

Clean bed-linen was a rare commodity, and as there was no means of disinfection of clothing for bed cases lice were present in large numbers. After a time the *General-arzt* of the Bavarian army, who inspected the hospital, provided a portable steam disinfector.

Baths were given to walking cases and personnel at a large factory in the town which had been fitted with a bathing and disinfecting station. The system here was good. When the soldier went in he undressed and put his leather articles and valuables in a numbered compartment of a large rack. His clothes he hung on a numbered coat-hanger, and this was then placed in one of several large steam disinfectors. The man then went to the bathroom, which was fitted with hot and cold water sprays and a limited number of body baths. On coming out he went into a room heated by steam pipes for a time until his clothes were ready. Later we had a couple of sprays fitted in a room in the hospital for the use of such patients as could stand a could douche.

The conservancy system in the hospital was crude. Large pits were dug and lined with brick and cement; over these the latrine houses and seats were built. From time to time these cesspits were pumped out into horse-drawn tanks, an unpleasant operation. Needless to say these latrines were also a source of nuisance at other times. During the summer flies gathered in force.

We left this hospital at the end of August and spent several days at a prison at Condé on the French frontier, where our unpleasant recollections of poor food and vermin-infested blankets are tempered by the memory of the kindness of a French lady, living opposite the prison, who smuggled in to us bread, lard, vegetable soup and a ragout of haricot beans and potatoes as often as she could. We then travelled by way of Brussels, Namur, Luxembourg, Metz and Strasbourg to Karlsruhe; from there we went to Rastatt in Baden, our place of captivity for the next two months. From Rastatt five medical officers were sent early in November to Langensalza in Thuringia, but the day after arrival I was sent on with a colleague to Ohrdruf.

There was a marked difference between our journey from France to Baden and our later journeys by rail. Whereas on the first we travelled fourth class, and received one hot meal only—a bowl of soup—at a soldiers' refreshment room, on the later journeys we travelled second class and were permitted to have meals at the station restaurants. The last stage of our journey coincided with

the outbreak of the revolution. At the railway station our guard was deprived of his shoulder straps showing the number of his regiment, and his cap badges were also removed. Trains flying the red flag, crowded with troops without arms and badgeless, passed through the station. The red flag was flying over an aeroplane factory at Gotha, over the station and over various barracks. Aeroplanes flying low dropped leaflets over all towns and villages requesting the troops to join in the movement.

As a result of this change we were informed on arrival at our destination by a private soldier wearing a red armlet that he was now head of the hospital, and that all requests must be addressed to him. A new *Chef-arzt* of socialistic opinions was introduced to the hospital, but as he was closely supervised by the *Soldatenrat*, or soldiers' council, he was more or less powerless, and we had few dealings with him beyond drawing his attention to various matters in connexion with the sanitation of the hospital.

We left this hospital on Christmas Day by hospital train, taking all the British with us. Lying cases were conveyed to the station in pantechnicons, the floors of which were covered with mattresses. The hospital train provided by the Germans was good of its kind, and had enough bunks, with clean bed-linen, for the majority of the patients. A day and a half later we ran alongside the naval hospital ship *Garth Castle* at Stettin, where we were warmly welcomed, and on her we travelled in all comfort.

We returned from Germany with a higher opinion of British organization than ever before.

THE ADJUSTMENT OF RESPONSE TO NERVE STIMULUS IN VOLUNTARY MUSCLES.

BY

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THIS paper is founded on the result of tests made upon many hundreds of men wounded in the present war, in the electricity departments of two of the largest military orthopaedic hospitals. The patients pass through these departments to be tested and treated for every grade of nerve injury, ranging from slight shock or compression to complete division. Nerves are sutured in the operating theatres, and their subsequent regeneration and the reaction of the muscles they supply observed through all the stages of recovery, while oncoming compression from formation of fibrous tissue in healing wounds may be observed with all its resulting effects upon the response of the muscles to various forms of stimulus.

The observations here recorded were made by means of an apparatus the essentials of which are a transmitting rod resting upon the skin over the muscle observed and attached to a tambour connected with a pen tracing its movements upon a revolving drum. This apparatus records the character of each muscle contraction with accuracy and reliability.

The electrical stimulus used was the closure of the circuit of a galvanic current by a metronome interrupter with mercury make and break. This gives a stimulus of indefinite duration.

Unless otherwise stated, both electrodes were placed over the muscle. When the term "normal" occurs in describing the contraction of a muscle, it is used to denote equality with the opposite and uninjured side. The metronome has in all cases been timed to interrupt sixty times a minute, so that the resulting contraction can, when desired, be expressed in fractions of a second.

It has not been considered necessary to record the temperature of the room or other details which might alter the character of the response in a small degree, because the value of the tests depends upon the comparisons between the muscles of the two sides, and the conditions have been identical for these in all cases. The tracings are reproduced from the original records made by the pen on the paper of the revolving drum.

The Contraction of Normal Muscle.

The first tracing (Fig. 1) shows the contraction of a normal muscle (biceps brachialis). The upstroke and downstroke show that the contraction and decontraction of the muscle occupy practically the same length of time.

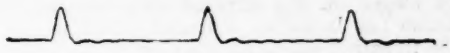


FIG. 1.

Never in this long series of tests has a muscle supplied by a normal nerve been found to show any visible difference in character from the same muscle on the opposite side, even though it may be so much wasted (as in a limb splinted for long periods for compound fractures) that a galvanic response is only obtained with great difficulty.

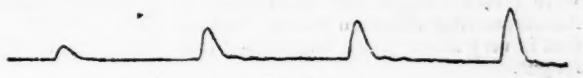


FIG. 2.

Fig. 2 shows the succession of contractions in a normal muscle produced by stimuli the strength of which has been gradually increased, and the tracings show that the smallest contraction produced by the weakest stimulus is exactly equal in length to the greatest contraction produced by the strongest stimulus. In other words, it shows that within certain limits the duration of contraction in a muscle is the same whatever its strength.

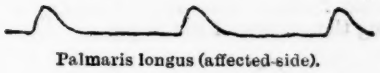
On one side of this limit are contractions excited by a stimulus so small that the resulting movement is partly lost by the yielding of the surrounding tissues, and on the other, contractions so violent that the surrounding tissues take appreciable time in returning to their resting position.

The wide range in the records shown in this figure are enough to demonstrate that slight variations in the height of the contraction when comparing two sides are quite immaterial. Another fact observed is that, except in cases of disease of the muscle, which do not come within the scope of this paper, successive contractions recorded from any muscle, whether the nerve be injured or not, are always the same length at any given observation.

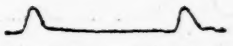
FIG. 3.—Polar reversal (extensor carpi radialis longior).

Fig. 3 shows tracings taken when one electrode was placed over the normal muscle and the other at a distance. By means of a reversing key the poles were reversed before each stimulus, so that the contractions were excited alternately by the short sharp stimulus produced at the negative pole, and the diffuse stimulus of a virtual negative deep in the tissues. It will be seen that the length of the resulting contraction is the same in each case.

Abnormal Contraction of Muscle.

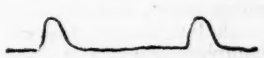


Palmaris longus (affected side).



Palmaris longus (normal side).

Flexor carpi radialis (affected side).



Flexor carpi radialis (normal side).

FIG. 4.

Figure 4 shows tracings taken from the palmaris longus and flexor carpi radialis of a patient whose median nerve had been involved in scar tissue. An exploratory operation had been performed, and the nerve was inspected and found to be as stated.

In this case, although the fibres of the nerve were compressed by the scar, they were not destroyed, because they were found to transmit a stimulus to the muscles they supplied when excited immediately below the constriction by the faradic current.

On comparing the contractions of palmaris longus on the affected side with the normal side, it is seen that

though the contraction producing the upstroke of the graphic record is equally brisk in each case, the downstroke produced by the decontraction of the muscle is slightly longer on the affected side, showing that the contraction has lasted for a longer period in the muscle with the impaired nerve supply than in the muscle with the normal nerve supply. On testing the muscle by means of the interrupted faradic current it was found to give somewhat weakened response, showing that its nerve fibres were still functioning. In short, it was a case of slight interruption to the motor nerve, and it showed a slight lengthening of contraction in the muscle.

On the other hand, the flexor carpi radialis gave no response to the faradic stimulus, showing that its fibres were further implicated than those of palmaris longus. Accompanying this sign we see that the curve of contraction is very much more lengthened than that of palmaris longus.

Extensor carpi radialis longior (affected side).

Extensor carpi radialis longior (normal side).

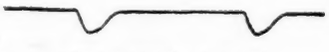
FIG. 5.

Fig. 5 shows tracings of the contractions of the extensor carpi radialis longior after complete division of the musculospiral nerve. The contractions are lengthened to about the same degree as those of flexor carpi radialis in the preceding figure.

Tibialis anticus (affected side).

Tensor fasciae femoris (affected side).

Tibialis anticus (normal side).



Tensor fasciae femoris (normal side).

FIG. 6.

Fig. 6 exhibits the contraction of the tibialis anticus and tensor fasciae femoris of an officer who had slightly displaced his right sacro-iliac joint. After this he suffered from weakness in the muscles supplied by the fourth and fifth lumbar nerves, of which the above two were selected for the test. The response of the muscles to faradic stimulus was apparently normal, but the tracings show that on the affected side both these muscles gave lengthened contraction. The fourth and fifth lumbar nerves cross the sacro-iliac joint, and their slight involvement in the inflammation of the joint had resulted in a slight inhibition of their function. The tracings of tensor fasciae femoris are reversed owing to its action in retracting the surface of the thigh.

Flexor carpi radialis (affected side).

Flexor carpi radialis (normal side).

FIG. 7.

Fig. 7 records the contraction of the flexor carpi radialis in another case of nerve compression. There was a weak response to faradic stimulus, showing incomplete interruption of the median nerve, and the curve shows that the contractions, though lengthened, are not of such length as is reached in complete reaction of degeneration. A few days after this record was taken, as the ulnar nerve gave signs of complete interruption, an operation was performed for its suture, and the median nerve was found to be slightly involved in scar tissue.

Observation shows that in a case of oncoming compression the first sign to be observed in the muscle supplied by that nerve is a slight lengthening of the response, which increases as the nerve becomes more involved, until a point is reached when the lengthening proceeds no further. This stage occurs while a faradic response is still obtainable. The contractions then last commonly a third of a second. In a case of complete nerve division the response quickly becomes this length and remains so until nerve regeneration has taken place. When the new axis cylinder has grown down to the muscle after nerve suture, the response to faradic stimulus of the nerve is again established, but it is not until some time after this (several weeks) that the length of contraction in the muscles starts to shorten. The shortening then gradually takes place until (usually after a space of several months) the myograph shows the response to be reduced to normal length.

Having now shown that in cases of motor nerve interruption, partial or complete, the contractions of the muscle supplied by it are lengthened, and having stated that of the many hundreds of cases examined no single case has occurred in which this sign has been absent, I will deal next with cases in which contraction of the muscle has been observed to be shorter than the normal.

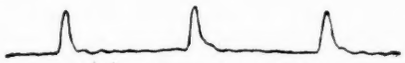
Flexor carpi radialis (affected side).

Flexor carpi radialis (normal side).

FIG. 8.

Fig. 8 is a myogram from a case typical of those described by Babinski and Froment and shown by them to be of reflex origin. The patient was an officer who had sustained a simple fracture of his radius. The limb was splinted and the bone united in good position. When union had taken place a condition of tetanic contracture arose in the flexor carpi radialis, none of the other muscles of the forearm being affected. The condition persisted for ten months without relaxation, causing the fullest possible flexion of the wrist.

In order to distinguish the case from one of hysterical contracture, I had the patient deeply anaesthetized, and it was seen that there was not the slightest relaxation of the affected muscle. The case was, in fact, typical of an irritative lesion of afferent nerve fibres, causing a reflex contracture of flexor carpi radialis through the median nerve. It will be seen that the curve of contraction made by the affected muscle is shorter than on the normal side.

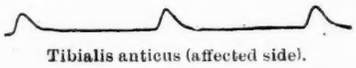


Semitendinosus (affected side).

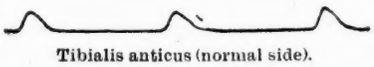
Semitendinosus (normal side).

FIG. 9.

Fig. 9 is a tracing of another reflex contracture, involving the semitendinosus. The contracture came on shortly after a wound of the hamstrings, and had persisted for two months when the myogram was made. This patient also was deeply anaesthetized, and no relaxation of the affected muscle took place. The shortening of the response in the affected muscle in this case is much more pronounced than usual. Observations made upon several of these reflex contractures have produced a like result in each case.



Tibialis anticus (affected side).



Tibialis anticus (normal side).

FIG. 10.

Fig. 10 is a tracing made from the contractions of tibialis anticus in a patient who had suffered from cerebral haemorrhage four years previously. This upper neurone affection had produced hemiplegia, from which he was still suffering at the time of observation, but only to a slight degree. His movements were weak on the affected side, and his reflexes much exaggerated in the leg observed. Here it is seen again that the contractions of the muscle recorded from the affected side are shorter than on the normal side. This result is typical of other cases observed.

In all these cases of an abnormal shortening of muscle

contraction, the difference from the normal is not nearly so great as in the cases of lengthened contraction, but it is perfectly clear.

Tibialis posticus (affected side). Tibialis posticus (normal side).

FIG. 11.

Fig. 11 records the contraction of the tibialis posticus in a case of hysterical contracture which had persisted for over twelve months. The muscle was tensely contracted, leading to equino-varus position of the foot, and the condition had begun after injury to the thigh. Unlike true reflex contractures, this condition was cured after a short course of psycho-therapy. It will be seen that the contractions of the affected muscle are of exactly the same length as on the normal side, and it was this observation that led to the adoption of psycho-therapy as the suitable treatment.

Conclusions.

In the foregoing records I have shown that after injury to a motor nerve the muscles supplied by the injured fibres respond to stimulus with a contraction longer in duration than that of normal muscle, and that this has been observed in every one of the many hundred cases tested. It appears to me that this lengthening of the contraction is due to hyper-excitability in the muscle following a definite sequence of events, though there is an alternative conclusion which I am at present investigating.

It is a matter of common knowledge that when for some pathological reason the stimulus from the upper motor neurone weakens or ceases, the anterior horn cells of the lower neurone become hyperexcitable, and the muscle tone is increased.

In health there must always be a delicate adjustment between the irritability of the upper and lower neurones, so that the lower respond in a proper degree to the stimuli passed down from above. For this reason it is a natural sequence for the lower neurone to become hyperexcitable when for any reason the upper stimuli become less intense, and we know that in upper neurone impairment this hyper-excitability is increased to a pathological degree, as shown in the exaggerated reflexes of such cases as cerebral tumour, certain injuries of the cord, etc.

There must also be an adjustment of irritability between the lower neurone and the muscle. As an instance of lower neurone interruption the most typical case to cite is one of complete division of a nerve.

In Fig. 5 the record of the contraction of extensor carpi radialis longior after division of the musculo-spiral nerve shows a great lengthening of the period of decontraction, and that is exactly what one would expect if the excitability of a muscle were increased. That it is not a slowness of contraction is made evident by the angle of the upward line showing the contraction of the muscle. It is true that frequently this upstroke is more slanted than normal in tracings of muscles whose nerve supply has been retarded, but this difference is always very slight compared with the difference in the length of the line showing the decontraction, and I ascribe it to slight tissue changes owing to disuse. At any rate, in many cases, as in that shown in Fig. 5, there is no slowing of contraction displayed while the period of decontraction is much prolonged. I think this lengthening of the period of response of paretic muscle is not to be associated with the chronaxie (rapidity of excitability) of a muscle, because it has been abundantly proved by Lapique and others that the chronaxie of these muscles is increased to as much as thirty or forty times the normal, whereas I have shown that the response to the stimulus lasts at most three or four times as long as the normal. In fact, the chronaxie would appear to bear no further relation to the contraction of the muscle than the flash point of an explosive to the explosion.

In the examples exhibited above, it has been shown that when the nerve impulse is slightly retarded, the muscle responds with a slightly lengthened response; that when the nerve impulse is further retarded, the muscle responds with a further lengthening of the response; that when the nerve retardation reaches a certain point, the muscle reaches a limit of response beyond which it cannot go, and this response is the same in cases of severe nerve compression or of complete division of the nerve. We have seen also that after suture of the nerve, and its subsequent regeneration, response to faradac stimulus first appears in the muscle, proving the dawn of the new nerve supply. Then after a period the muscle begins to respond first with a slight shortening of the contraction, and then, following the gradual establishment of nerve influence, with a gradual further shortening until, following the complete regeneration of the nerve, the muscle response is restored once more to its normal length.

It is not intended here to dwell upon the great value as an aid to the more exact diagnosis of delicate nerve lesions which is to be found in the phenomena above described, but rather to look upon the subject from a purely scientific standpoint.

Having stated that probably the excitability of the muscle is increased as a result of decreased stimulus from the nerve, and that this is in the nature of an attempt at adjustment on the part of the muscle, it now remains to be shown in support of the latter statement that when the excitability of a lower motor neurone is increased that of the muscle is reduced. For this purpose I have selected the three cases given above—one of upper neurone affection, with the exaggerated reflexes common to these cases, and the others of contracture of the muscle due to reflex irritation, and in each of these cases the duration of response in the affected muscles has been shown to be shortened. These instances present a picture of protective hypo-excitability in muscles supplied by hyperexcitable nerves.

Summary.

1. A muscle undergoing a succession of stimuli of varying strength responds with a succession of contractions of varying intensity but of equal duration.
2. The duration of the contraction of a muscle is the same whether it occurs in response to a short sharp stimulus or to a long diffuse stimulus.
3. When the conductivity of a motor nerve is slightly reduced by slight compression or injury the duration of response in the muscle it supplies is slightly lengthened.
4. When the conductivity of a motor nerve is much reduced or entirely destroyed the duration of response in the muscle is much lengthened.
5. When the stimulus from a motor nerve is abnormally and persistently increased the duration of the response in the muscle supplied by it is shortened.

A CONTRIBUTION TO THE STUDY OF ACUTE RHEUMATISM.

BY

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THE case here briefly recorded was remarkable in its clinical course, but medical literature abounds with so many surprises that this in itself would not justify publication. It is because it adds one more link to the chain of evidence upon the cause of acute rheumatism that I believe it to be of value to the student of the disease.

R. K., a girl aged 17, machinist, was admitted to the hospital July 2nd, 1918, suffering from weakness, nervousness, palpitation, and dyspnoea on exertion. A pale, thin, delicate girl, she was obviously the victim of Graves's disease and organic heart disease. The cardinal symptoms of enlarged thyroid, exophthalmos, tachycardia, and tremor, with von Graefe's sign, were all present. The heart was considerably enlarged, and there was a double mitral murmur. The history was of some interest, for the heart disease dated from an attack of rheumatic fever two years previously, and at the same time the thyroid enlargement was noticed by her doctor. The association of Graves's disease and acute rheumatism is one that is well recognized, but it is exceptional for the two conditions to be noted simultaneously.

The course of the case was at first uneventful, treatment by *x*-ray applications and sedatives producing some gradual improvement. On August 19th, however, she developed a severe sore throat, the temperature rose, and multiple arthritis affecting the ankles, wrists, and shoulders followed, and it was clear that she was commencing another attack of rheumatic fever. A rheumatic erythema developed, followed by cardiac dilatation, and on September 1st pericardial and pleuro-pericardial friction.

From this date onward her condition became extremely grave, the pericardial friction became general, and there followed all the signs of an unusually copious pericardial

effusion. The area of cardiac dullness extended upward and to the right and left, with muffling of heart sounds, small and rapid pulse, and collapse of the lower lobe of the left lung. Exploration excluded pleural effusion, and after fluctuations in the severity of the symptoms and failure of local applications, Mr. Raymond Johnson tapped the pericardium on October 6th, far back on the left side, and drew off 18 oz. of sero-fibrinous fluid, which during withdrawal showed the characteristic pulsatile stream.

The fluid was centrifugalized, and both free and in still greater numbers taken up in the leucocytes, were demonstrated numerous minute diplococci.

Recovery was remarkably rapid, the temperature falling to normal four days later—after a course of irregular fever lasting five weeks, and reaching at times to 103° F. The pulse-rate, which had reached to 156 in the minute, fell to 112, and the impulse of the heart became well defined and forcible in character. A wave of severe influenza then spread through the ward and the patient was attacked—needless to add, to the general dismay. From October 14th to the 22nd there was fever, which on two occasions touched 103.8° F., but the attack was passed through without serious pulmonary complication or cardiac dilatation. From that date onward she made uninterrupted progress, leaving the hospital for Christmas, with a well compensated mitral lesion. A month later improvement was maintained, but two months later the thyroid, which had diminished greatly in size during her acute illness, together with all the other signs of Graves's disease, had commenced to enlarge again, coincident with an exacerbation of the exophthalmos—and it was apparent that there was a relapse of the hyperthyroidism—for which she is again under treatment.

There is no doubt that there is much quiet scepticism as to the reality of the diplococcus, due in part to the difficulties in demonstrating its presence, the infrequent opportunities afforded, and its minute size. It may be said to hold among bacteria the position of the famous Mrs. Harris of Sarah Gamp fame. Such being the prevalent attitude of mind, it is obvious that *post-mortem* contamination is a ready explanation for the results which have been obtained from cultures, for few can spare the time to sift the detailed evidence to the contrary which, at best, makes dull reading. This case, however, presents, I think, a clear issue. A patient, the victim of acute rheumatism, with a heart injured by a previous attack, passes through a second most severe one while under observation in hospital. A general pericarditis with copious effusion develops, and the fluid withdrawn by paracentesis shows numerous minute diplococci, some in the fluid, many more carried up in numbers by the polynuclear leucocytes.

The stage of the illness is one in which the acute phase is subsiding, but death is threatened from mechanical embarrassment. This patient does not die, the effusion does not return, the temperature falls, and eventually the recovery is so good that she leaves the hospital able to walk short distances, and with a compensated mitral lesion.

Some years ago Dr. Paine and I recorded the isolation of the diplococcus from the blood stream and synovial fluid during life, and we have repeatedly emphasized the rapid destruction of the diplococcus in animal tissues by leucocyte and tissue cells. Now we have once more the proof of its presence in the fluid from the pericardium of a patient who is living, and we have gained a further step in its life-history in man, and further light upon the process of recovery in rheumatic pericarditis. Clearly the cells in the exudate are busy destroying the diplococci in great numbers, and we are not surprised that cultures may not prove invariably successful, for we have always to bear in mind that if the process of their destruction is already in progress, the sudden transfer to a culture medium which can but imperfectly represent the living human medium may give the final death blow to the harassed micrococci.

This has been the first case in which I have been fortunate enough to obtain a living pericardial exudation in man in this particular phase, and it completely supports the results of experimentation.

This result also serves to strengthen the extreme probability that in the human cases of rheumatic pericarditis in which there is little effusion but great thickening of pericardial tissues, the diplococci are shut in the necrotic areas but imperfectly destroyed; and, lurking there, flare up into virulence from time to time, and thus cause the intractable relapsing examples met with in childhood. Lastly, we can realize how difficult it must be to determine, when once a patient has been infected, whether a renewal of symptoms is evidence of a fresh attack or the recrudescence of latent disease, and we are confirmed in the faith that rheumatism must if possible be prevented, and failing this, be most persistently guided to as complete a recovery as possible.

FOUR YEARS' WORK AT AN ANTE-NATAL CLINIC.

By ARTHUR CROOK, M.R.C.S., L.R.C.P.

In this account of the work of the ante-natal clinic at the Norwich Maternity Institution during the four years 1915–18 I shall endeavour to indicate, not results, but some lines on which future work may profitably be pursued.

The patients were drawn from those who went to the institution for attendance in their homes in the surrounding district, supplemented by patients sent by the M.O.H. and a few by private doctors and midwives. The total number was 308 (151 primiparae and 157 multiparae).

The notes of the cases were filed on a card index system, and the figures and statements here given are based on these cards, and the corresponding labour and puerperium cards kept by the attending midwife.

All the primiparae were required to attend the clinic as a matter of routine, and such multiparae as complained of symptoms which might indicate abnormality as well as those who in the judgement of the "booking" midwife at the institution showed by their previous history or symptoms that there might be some abnormality.

The examinations were made at all stages of pregnancy; the women were encouraged to book early, but if they did a further examination was made at the end of the seventh month or afterwards, to decide, if possible, the factors not previously ascertainable, namely, the relative size and position of the fetus to the pelvis.

A physical examination was made of all the primiparae; it included mouth (teeth), throat, neck (thyroid), chest, abdomen (greatest girth), pelvis and limbs (oedema and veins). An examination of the urine was made at least monthly, from specimens sent to the institution. The blood pressure was estimated in many cases (Riva-Rocci instrument). The same routine was followed in multiparae when previous history or symptoms indicated it.

Pelvic Measurements.

Two cases of contracted pelvis were found. One with 2¾ in. conjugate, was admitted, and Caesarean section performed with success. The other, with a conjugate of a little less than 4 in., and giving a history of several difficult breech labours, with death of the child in all instances, was unfortunately, owing to pressure of work and depletion of staff, lost touch with; she did not come back for further examination at a later date as instructed, and was not seen again by me till well advanced in the second stage of labour, at least a month over her calculated date; a rapid delivery with forceps of an overgrown stillborn child did not save her in the profound state of collapse in which she then was; undoubtedly if the clinic had been able to keep in touch with her through a visiting nurse this bad result would not have occurred.

In a large proportion of primiparae (63) the interspinous (anterior superior) measurements were 9 in. or less to as low as 7⅛ in. in one case; of these only six were recorded as having any abnormal prolongation of labour, thus confirming Bourne's statement.[1] In many of these cases the estimated conjugate was not more than 4 in., indicating a small type of pelvis, but with a child not above the average size trouble need not be anticipated. "Whites," meaning by this discharge abnormal in quantity or quality, occurred in 48 women; the proportion of cases with "whites" rose steadily from 10 per cent. in 1915 and 1916 to 20 per cent. in 1917, and to 25 per cent. in 1918. In all these cases treatment was given during the pregnancy, and on the card for the attendant midwife was a prominent notice directing her, if in time, to give a douche before labour, and to instil protargol into the eyes of the infant. It is satisfactory to record that not a single case of severe ophthalmia occurred in the four years. No case of syphilis either in the first or second stage was met with.

There were seven cases of heart disease with some breakdown in compensation; all except one got through labour

without help, beyond the internal administration of strychnine and digitalis during the last weeks of pregnancy; the exception, not apparently a bad case, was found dead in her bed a few weeks before full time: she had been taking the drugs mentioned. This case illustrates the extreme difficulty of treatment and prognosis in cases of heart disease with pregnancy—a difficulty which should, however, be largely removed if a sufficient number of cases could, after careful examination, be watched at ante-natal centres through pregnancy and labour and afterwards.

The so-called physiological enlargement of the thyroid gland in pregnancy was not met with; not more than two or three of the patients showed any signs of thyroid hypertrophy, and in them it was of old standing.

A comparison of the maximum girth of the abdomen during the eighth or ninth month of pregnancy and the weight of the children immediately after birth was made in 148 cases; excluding 5 cases noted as fat, and one of hydramnios, the results seem to indicate that with a girth not exceeding 36 in. the child will not weigh more than 7 lb.; this confirms the rule laid down, I believe, by Ayres in America and quoted by Herman.

The blood pressure in normal pregnancy seems to be unaltered. An abnormal blood pressure may be due to an abnormal pregnancy or some disease complicating normal pregnancy.

Among the cases found with albumin in the urine, one, a primipara, came in 1916, late in her pregnancy, with a large amount of oedema and urine almost solid on boiling; she was immediately admitted and labour induced. She still (January, 1919) has a heavy trace of albumin in her urine and morning headaches. This failure of complete recovery after delivery, seen in some cases of albuminuria in pregnancy, should receive more attention. Is it due to the intensity of the initial attack, to the length of time the kidney complication exists, or to a renal lesion in existence previous to the pregnancy? If the last be the explanation, can treatment from the commencement of the pregnancy prevent or keep it in abeyance sufficiently for a living child to be delivered without undue danger to the mother? The records of some cases of chronic renal disease with pregnancy point somewhat to this last possibility.

Cases of excessive venous engorgement of the veins of the lower limbs were treated by bandaging to just below the knee, and in many cases the patients given aperients combined with strychnine and digitalis internally. The etiology of this complication of pregnancy is by no means clear; it cannot all be due to mechanical causes, for a woman in two successive pregnancies under equal conditions may in one pregnancy have distended veins and in the other no signs of them. I am at present inclined to consider it a question of circulatory power.

Multiparae who presented no detectable sign of disease or abnormality of the pregnancy, but came complaining of "feeling faint," "bad feelings," or a history of an early slight loss of blood in pregnancy, showed by an examination of their labour cards a great liability to give birth to stillborn or premature non-viable children, and the unknown cause of this fetal mortality leaves a valuable field for future research work. I am not here including cases whose history is typical of an old syphilitic infection with pregnancies terminating later and later in gestation, but rather cases giving the impression of a frail constitution, possibly the future victims of tubercle, heart failure, or renal disease.

In conclusion, one rare curiosity was observed—the patient had advanced disseminated sclerosis and pregnancy; her labour was normal, but she died some weeks later of her nervous disease.

REFERENCE.
[1] BRITISH MEDICAL JOURNAL, January 18th, 1919.

THE American Congress of Physicians and Surgeons will be held in Atlantic City this year on June 16th and the two following days. It was to have been held in Washington, but owing to the uncertainty of hotel accommodation there the place of meeting has been changed.

A CONGRESS on the history of medicine is to be held at Antwerp in 1920, on the occasion of the golden jubilee of Dr. Broeckx, the first medical historian of Belgium, and of the third centenary of the foundation of the Antwerp Medical Club in 1620.

The Milroy Lectures

ON

HALF A CENTURY OF SMALL-POX AND VACCINATION.

DELIVERED BEFORE THE ROYAL COLLEGE OF PHYSICIANS OF LONDON.

BY

JOHN C. McVAIL, M.D., LL.D.

CONTROL OF SMALL-POX IN THE PRESENT DAY.

HAVING discussed small-pox as it was and is, and vaccination as it was and is, we now come to the important practical question of the control of small-pox in the present day. In considering this subject it is necessary to take account alike of the attack and of the defences. As to the former, small-pox in this country is, broadly speaking, a less fatal, a less infectious and a less prevalent disease, than it was fifty years ago. The diminution (which first appears definitely in the 1892–95 epidemic), while irregular, has been fairly continuous and has been very specially notable since about 1904.

Other factors in respect of attack are that the disease is not infectious in the incubation stage, that its infectivity is limited in the pre-eruptive stage and does not reach its maximum until vesiculation and pustulation, that it is not conveyed by water supply nor by drainage, that milk epidemics are unknown, and that there are no chronic carriers. Epidemics also often begin slowly, and when that is the case there is an appreciable period within which urgent measures may be carried out by a vigilant public health authority. The several weapons in the armoury of communal defence have now to be considered.

I. VACCINATION.

Vaccination and revaccination at once claim the first place. On the one hand, owing to increasing neglect of systematic infantile vaccination an increasing proportion of the population is not immune to small-pox, but on the other hand the calf lymph system of the Local Government Boards is of the first importance as a measure of defence. In the old days, as I have already pointed out, all that could be relied on in presence of the most extensive epidemic was the exiguous supply of humanized lymph which could be obtained once a week from the arms of infants under the routine of primary vaccination at the age of three months in England and six months in Scotland. Now a huge stock of half a million tubes of glycerinated calf lymph is kept in constant readiness, fresh material being regularly added to replace material which, through lapse of time, is regarded as of doubtful efficacy. Also the vaccinal process runs a shorter course than the incubation stage of small-pox, and if the protective operation be performed within two or three days after infection, vaccinia gets home first, and variola, when it comes along, usually finds the fortress barred against its entrance. The position, however, has its disadvantages. There is always the possibility that the operation of revaccination may not be successful, and this is a risk which has to be run by the individual who has previously neglected to protect himself. Other things being equal, the work of vaccination should be done leisurely and systematically. In revaccination the convenience of the youth or adult concerned should be considered, especially with regard to the opportunity for taking a few days' rest from any heavy manual labour, to prevent inflammation around the vesicles on the vaccinated arm. Even under a system of emergency or panic vaccination this rest should be obtainable if required, especially because experience indicates that there is more likelihood of an inflamed arm in the adult than in the child. But there should be little incapacity if the vaccination has been done in cleanly fashion and is covered up with cotton-wool and boracic acid whenever it is seen that a marked reaction is to follow.

Recent Vaccination.

Vaccination or revaccination in presence of an epidemic has the supreme advantage of recency. The immunity obtained is of the highest degree. The outstanding example of the effect of recent revaccination on a large

scale in this country is that of the city of Glasgow in 1901–2. Glasgow had prepared at enormous expense a great international exhibition, and fear arose that it would prove a municipal and financial failure owing to a threatened epidemic of small-pox which would prevent visitors flocking to the city. In these circumstances the Corporation, acting on medical advice, entered on a great vaccination crusade throughout its borders. It employed and paid the whole medical profession of the city to vaccinate all who could be induced to accept the protection, and the medical officer recorded the results fortnight by fortnight. They are set down here in tabular form.

TABLE V.

Not Recently Revaccinated and Recently Revaccinated Population of Glasgow, over Five Years of Age, in each Fortnight, with the Case. of Small-pox occurring in each Class. (Dr. A K. Chalmers.)

	Not Recently Revaccinated.		Recently Revaccinated.	
	Population.	Cases Registered.*	Population.	Cases Registered.
1901.				
Jan. 12	675,887	23	0	0
,, 26	674,816	350	1,071	0
Feb. 9	671,025	202	4,862	0
,, 23	634,213	127	41,674	0
Mar. 9	556,561	299	119,326	0
,, 23	518,426	161	157,461	0
April 6	474,694	92	201,193	0
,, 20	429,056	67	246,831	0
May 4	384,371	28	291,516	0
,, 18	366,125	18	309,762	0
June 1	352,633	11	323,254	0
,, 15	347,777	2	328,110	0
,, 29	345,293	8	330,594	0
July 13	281,867	1	394,020	0
Nov. 16	279,452	1	396,435	0
,, 30	279,232	5	396,655	0
Dec. 14	279,020	4	396,867	0
,, 28	278,795	0	397,091	0
1902.				
Jan. 11	278,623	28	397,264	0
,, 25	278,152	23	397,735	0
Feb. 8	277,653	23	398,234	0
,, 22	277,134	147	398,753	0
Mar. 8	276,033	92	399,854	0
,, 22	274,611	85	401,276	0
April 5	272,694	36	403,193	0
,, 19	271,619	15	404,268	0
May 3	271,032	10	404,855	0

* The cases under five years have not been excluded from these figures, because their allocation through the various fortnights would have been difficult, and their inclusion is unimportant. In the 1900–1 part of the outbreak these numbered 60, 54 of whom (including 30 cases occurring under one year) were unvaccinated primarily.

It will be noted in the first column how the population not recently revaccinated was gradually diminished from 675,887 in January, 1901, to 271,032 in May, 1902, and how correspondingly the recently revaccinated population increased from *nil* in January, 1901, to 404,855 in May, 1902. During all that period the small-pox cases were also noted fortnight by fortnight. From beginning to end they were confined absolutely to the not recently revaccinated section of the population. Not a single case occurred among the recently revaccinated, and when another epidemic broke out after an interval of fully a year, only one of the 400,000 revaccinated was attacked.

Money Payments.—To enable a vaccinee to take a few days' rest after the operation many public health authorities in presence of threatened small-pox now offer a small money payment, especially to the inmates of common lodging-houses or persons of the like class. I have even known of a lodger presenting himself with bared arm for revaccination who when casually gripped by the other arm demonstrated expletively that he had been very recently revaccinated and that his second presentation of himself was due to the desire for another payment. Payment is not a high class of inducement towards protection against small-pox, but in the absence of other pressure or obligation resort has to be had to the method which suits the character of the individual.

Vagrants.—In connexion with vaccination the relation of vagrants and casual workers, navvies and the like, to spread of small-pox has often been discussed. Dr. Henry Armstrong, medical officer of Newcastle, published the result of a series of inquiries concerning it in 1893. The London County Council convened a conference of sanitary authorities on the subject in 1894, and the dangerous part played by the vagrant is universally admitted. Dr. Kaye of the West Riding estimated that there were about 36,000 tramps and vagrants in England—a truly formidable number, with great possibilities as carriers of small-pox.

The Royal Commission in its final report in 1896 made a series of recommendations for better control of common lodging-houses in respect of small-pox prevention. Common shelters should be made subject to the law relating to common lodging-houses. Local authorities should have power to require medical examination of inmates of common lodging-houses and casual wards; to order the exclusion of fresh inmates for any required period; to close common lodging-houses temporarily; to offer free lodgings to inmates under suspicion of infectivity; should report to other sanitary authorities; and should offer vaccination to inmates.

II. COMPULSORY NOTIFICATION OF INFECTIOUS DISEASE.

Voluntary notification of infectious diseases was recommended in the Local Government Board's report for 1877, in which Poor Law medical officers were instructed to intimate every case, and it was advised that doctors be supplied with postcards for voluntary notification, the vaccination officers having similar instructions for intimation of cases. About this time various public health authorities were obtaining compulsory powers under local Acts. I think the first of these in England was Huddersfield in 1876. Others were Bolton, Nottingham, Jarrow, and Burton-on-Trent. Leicester followed in 1879.* In Scotland Greenock obtained powers in 1877, Edinburgh in 1879, and Aberdeen in 1881. Compulsory notification proposals were received with some hostility both by medical men and by opponents of vaccination. So late as November, 1894, the *Vaccination Inquirer* expresses its "hearty sympathy" with a medical objector to compulsory notification.

Notification of infectious disease was provided for in 1889 by an Act which local authorities could adopt if they so desired. It became compulsory in 1899, and is essential alike to the successful practice of emergency vaccination and to all supplementary measures for dealing with small-pox epidemics. Obviously to control a serious infection one must first be aware of its existence. Fifty years ago the knowledge which came to the public health officer was at the best casual and fragmentary—so casual and so fragmentary as to make impossible the stamping out of an epidemic otherwise than by general vaccination and revaccination, whilst these measures, as already indicated, were strictly limited by insufficiency of humanized lymph. Now the case is widely different. There is no disease of which the medical practitioner is more certain to give immediate notification than of small-pox, actual or suspected. Notification, of course, should be prompt, and the telephone or telegraph should be freely used in addition to written intimation to the medical officer of health.

Diagnosis.

As a preliminary to notification, diagnosis is obviously essential. But there is little opportunity in the present day for instruction of medical students, and the longer this remains at a minimum the better it is for all concerned, as it means that small-pox is absent. Such opportunity, however, as does exist should be fully taken advantage of, and wherever a case of small-pox can be seen students and practitioners within reach should be given, under due precautions, facilities for seeing it. Fortunately, as the result of action taken by the Royal College of Physicians in 1887, the institutions of the Metropolitan Asylums Board are now available for the education of students. The great hospitals for infectious diseases throughout the country are similarly at the service of the medical schools. To deal with actual outbreaks an excellent practice has been established by the Local Government Boards of England and Scotland of assisting any local health authority which has to deal with small-pox by giving them the aid of a medical inspector specially acquainted with the subject. Advantage should always be taken of this service not only for diagnosis but for the whole scheme of preventive measures.

* Dr. Millard, who ought to know, makes a puzzling statement as to Leicester. He says: "Compulsory notification came into force under a local Act as early as 1878."[1] But the Act was not passed until August 11th, 1879, and the Royal Commission say (par. 481, Final Report) that it came into operation after that year

III. PUBLIC HEALTH STAFF.

The next great difference between the past and the present consists in the vastly improved public health staff now employed by the very great majority of local authorities. In 1870 there was in Scotland only a single whole-time medical officer of health. For the rest, each so-called public health authority gave a more or less nominal appointment to some doctor in general practice, commonly without any special study or knowledge of hygiene or disease prevention. Diplomas in public health were not instituted for a good many years after 1870, and even yet the possession by a health officer of such a diploma is not invariable. They are mentioned in this connexion merely as indicating the education and training in the prevention of infectious diseases which are now obtainable. If one looks at the list of textbooks and publications of all sorts which have come into existence in relation to public health and compares it with the meagre literature of 1870, an indication of the changed conditions is obtained. In the early days of public health diplomas bacteriology was hardly even a rudimentary science, and the laboratory part of the practical examination was confined to chemistry and microscopy. Bacteriology, unfortunately, has, so far, been of little value in respect of small-pox, but the place it now occupies indicates the tremendous improvement that has taken place in the equipment of the public health staff of a local authority. Almost every day whole-time appointments are being substituted for part-time, and comparatively soon this advance will be complete. The medical officer, besides, has now a staff incomparably better than existed, or could have existed, in 1870. Just as education for the diploma in public health has advanced, so has education of the sanitary inspector, who displaces the old inspector of nuisances.

Let me say in a word on this point that the outstanding insanitary condition which can be regarded as of consequence in spreading small-pox is overcrowding. Propinquity of individual to individual within dwellings undoubtedly favours extension of the disease, and the system of high tenement buildings giving accommodation to many households and approached by a common turnpike stair makes small-pox, once it has obtained a footing, very much more difficult to control in a city like Edinburgh or Glasgow than in any English working class town with houses only two stories high and each dwelling with its own door opening directly on the street.

IV. SURVEILLANCE OF CONTACTS.

Search for small-pox contacts was no doubt attempted to some rudimentary extent even in the pandemic of the Seventies. In 1878, referring to a report by Dr. Johnson, assistant medical officer of Leicester, in which he describes quarantining of contacts, the BRITISH MEDICAL JOURNAL says Dr. Johnson is in error in thinking his plan novel, as it had been practised in the metropolis and elsewhere, not only for small-pox but for cholera. The JOURNAL agrees that it is undoubtedly very useful at the commencement of what might otherwise have been an epidemic, and is worthy of being more extensively carried out. In cholera difficulty had been experienced in getting fathers into quarantine unless they were out of employment, "and then at least equal difficulty was experienced, at any rate in some places, in inducing them to leave the comfortable quarters provided." The practice thus seems not to have been confined to a single locality, but to have been more or less common. Obviously, however, observation of contacts could only be very imperfectly carried out in the absence of systematic notification of cases.

The epidemic of 1892–93, following as it did the passing of the (adoptive) Notification Act of 1889, furnished really the first opportunity for systematic surveillance of contacts on any extensive scale, and reports show that it was practised in many places: Warrington, Chadderton, Liverpool, Leeds, Oldham, Crewe, Stafford, Bradford, Gloucester, Leicester, Halifax, Sheffield, and Salford may be mentioned.

Under notification, surveillance is a routine duty of the most essential importance, and here the value of a trained and active public health staff becomes manifest. When the first case is discovered, and while it is being dealt with, the question of its origin is simultaneously investigated. The movements and doings of the individual before the development of the eruption, and for a day or two on either side of it, have to be rigidly investigated, and if the source of his infection is discovered it becomes a new centre of similar inquiries. Next the patient has to be questioned as to his movements during the period of possible infectivity. The household claims the first place, and if he has been an inmate of a common lodging-house, the household is a large and difficult one. His place of employment, workshop or factory, has next to be thought of, also houses which he has visited—meetings, churches, reading-rooms, libraries, educational classes, public-houses, and so forth. All these have this in common, that they give opportunity for indoor infection. As already argued, I am satisfied that, especially in a mild type of disease, indoor infection is much more to be feared than outdoor. Yet if the medical officer of health has succeeded in fixing the patient's memory on his doings on the days in question, and if he can get him to tell the whole truth, note should be made of casual conversations on the street, or of contact in open-air workplaces, especially where the patient's eruption is abundant and where diagnosis has not been made until the stage of vesiculation and pustulation.

A list of contacts having been prepared in this way the necessary action—immediate offer of vaccination, and surveillance—is taken with regard to them. It is by no means necessary that all of them should be seen daily for a fortnight from the discovery of the case. The date of contact should in each case be noted and the surveillance should have relation to the date. Contacts should be dealt with as human beings whose liberties are not to be needlessly limited. Round about the day on which the disease may be expected to appear there should, of course, be special vigilance. A well vaccinated and revaccinated man, after disinfection of his clothing, etc., need have no restrictions whatever put on his movements because he was a contact. A doctor should not be the only privileged person in this respect. And even for others less well vaccinated it is unnecessary that daily work should be abstained from excepting on the critical days, but warning should be giving of the necessity for at once giving intimation of the slightest symptoms of illness, usually backache and headache. There is at present no power to compel contacts to remain under conditions permitting of regular observation. They may roam the country as they please, and to deal with this difficulty special measures have to be thought of. In common lodging-houses the money factor comes in as in the case of vaccination of vagrants. It will profit the community to pay casuals to remain where they can be found at any time.

Reception Houses.—In large towns reception houses are very useful and they should have accommodation not only for individuals but for families. They have to be maintained, of course, by the public health authority. In the country reception houses are much less necessary and individuals can commonly be kept under observation at home.

School Closure.—The closure of schools in small-pox, as in the case of other infectious diseases, is a question of circumstances, and the practice may differ according to the facts. I have never myself had occasion to close a school for small-pox, and, as noted by Dr. Killick Millard, it is easier to keep under observation children in a school, especially from a central locality, than to visit them at their own homes. But, on the other hand, an unrecognized case in a school may have opportunity of spreading the disease into localities which would not otherwise be under risk of invasion. The question, as I have said, is one of circumstance, and vigilance is always necessary.

What small-pox may do when it finds entrance into a school is strikingly illustrated in the experience of the Borough of Ossett during the epidemic there.* An unvaccinated child attended school whilst suffering from small-pox. In her class were 27 children, of whom (*a*) 6 had been vaccinated and revaccinated, (*b*) 13 had been vaccinated only in infancy, and (*c*) 8 were unvaccinated. All those under (*a*) and (*b*) escaped attack. All those under (*c*) were attacked. In the same room were other 42 scholars, of whom (*a*) 8 had been vaccinated and revaccinated, (*b*) 20 had been vaccinated only in infancy, and (*c*) 14 were unvaccinated. All under (*a*) escaped attack, 5 of those under (*b*) were attacked, each of them

* Reported by Dr. Kaye of the West Riding County Council, and Dr. Greenwood, Medical Officer of Health, Ossett Borough, and quoted by Dr. Spencer Low in his report on the Dewsbury epidemic of 1904.

being over 11 years old, and 12 of the 14 under (*c*) were attacked. In other two rooms were 100 scholars, of whom (*a*) 45 had been vaccinated and (*b*) 55 were unvaccinated. All the 45 under (*a*) escaped attack, and 17 of the 55 under (*b*) were attacked. The type being mild, all recovered.

The difficulties of dealing with contacts are increased by the size and character of a community and by migratory habits of its population. In the east end of London one would expect control to be more difficult than in a residential part of the metropolis. Needless to say, every contact, whether intimate or remote—and contacts may be usefully so classified—should be advised to accept immediate vaccination unless he is already sufficiently protected. But pressure towards vaccination should never be excessive. The policy of Parliament to yield to strenuous objection should be borne in mind, and sometimes it turns out profitable not to have pressed too much. I have succeeded in vaccinating a whole village streetful of people as a result of development of small-pox by a contact who had ostentatiously refused protection.

V. Isolation of Small-pox.

One of the earliest advocates of isolation as a supplement to vaccination was Sir James Y. Simpson in 1868, in a paper entitled "Proposal to Stamp Out Small-pox, etc."[2] Simpson stated that "in despite of the marvellous influence of vaccination the mortality produced by small-pox in Great Britain is still very great and startling," and that "Jenner's immortal discovery saves from death from small-pox in our present population probably about 80,000 lives annually," but that "there still die from its ravages about 5,000 annually." Concerning these he wrote that "doubtlessly a stricter enforcement of the new compulsory laws of vaccination, and a greater amount of attention to its proper performance with proper matter will betimes diminish the number of the susceptible class." "Yet, in the meantime," he goes on to say, "that disease still revels with fatal power," and he asks, "Can it be arrested in its progress?" He believed it could, and proposed four regulations, which were briefly: (1) "The earliest possible notification"; (2) "The seclusion at home or in hospital of those affected"; (3) "The surrounding of the sick with nurses and attendants" immune by cow-pox or small-pox; and (4) Disinfection. He attached chief importance and devoted the rest of his paper to "seclusion," or isolation, which, it will be observed, might be conducted either at home or in hospital. Concerning infectivity he writes: "As the disease does not mature into the stage of infection for some days after the eruption shows itself, a free period would thus be secured to arrange proper measures of isolation, either at home or in hospital, before the date and danger of infection was reached."

In his opinions as to infectivity Simpson was mistaken, almost as Haygarth of Chester had been in the eighteenth century, but excepting that he makes no mention of contacts, his whole scheme shows a characteristic grasp of essentials. I have stated his views here because of the grave risk which exists that the opinions of so great a man on so important a subject may be seriously misunderstood by readers who do not turn for the facts to Simpson's own writings but accept second or third hand references to them. Simpson's "Proposal" was brought before the Royal Commission on Vaccination by a witness who gave no hint either by quotation or reference that the paper contained any mention of vaccination. The dissentient Commissioners in their Statement say that Simpson's paper "will be found at page 40 of the fourth volume of our reports." They believed so, but in fact the paper is not there. What at a casual glance appears to be the paper is there, but it is not the paper as published by Simpson, all the above important references to vaccination being absent. In a review of the dissentients' Statement[3] I pointed out with some fullness the misleading manner in which Simpson's "Proposal" was placed before the Royal Commission. In the next place, just as the dissentients relied on the evidence of the witness in question, so Dr. Millard, in a brief passage in *The Vaccination Question*, relies in turn on the dissentients' Statement, and, whilst quoting Simpson as to "stamping out," makes no mention of the fact that the proposal related to cases occurring amongst the fraction of the population left unprotected by vaccination. So the omissional error is perpetuated.

Other authorities who have urged the value of isolation hospitals are Dr. George Buchanan in 1874, and Dr. Thorne Thorne in evidence given before the Royal Commission which inquired into small-pox and fever hospitals in London in 1881–82, but the views of Buchanan and Thorne as to vaccination are so well known as to prevent any risk of misapprehension, at least for another generation.

Meantime, while isolation was being advocated by Simpson, Buchanan, and Thorne, it was being denounced by opponents of vaccination no less violently than was the Jennerian "rite" itself. In 1877 it was urged in one of a series of officially issued Vaccination Tracts that "small-pox hospitals are the culminating mistake in the social treatment of the disease. They are sewers of death to their inmates"; and so late as 1894 the *Vaccination Inquirer* declared itself strenuously opposed to compulsory removal to hospital. Now, however, isolation is advocated by antivaccinationists as if it were a discovery of their own and could be a substitute for vaccination. The Royal Commission tersely summed up the situation when they said regarding isolation, "what it can accomplish as an auxiliary to vaccination is one thing; whether it can be relied on in its stead is another thing."[4]

Hospitals.

As I have said elsewhere, small-pox hospitals are in a peculiar position in relation to prevention of the disease. If vaccination and revaccination were universal there would be no need for small-pox hospitals. On the other hand, if vaccination were absent, small-pox hospitals would be useless, unless, indeed, the whole staff connected with isolation measures—the medical officers, the sanitary inspectors, the ambulance drivers, the nurses, the hospital attendants, those who bring provisions to the hospital, and all connected with it—had already suffered from small-pox and had in that way achieved immunity. It is in the intermediate condition, with vaccination not universal, yet available, that small-pox hospitals find their place in the system of prevention.

Their Situation.—But when they began to be used on any appreciable scale in London and in Glasgow in the epidemic of the Seventies it is true to say that they did much more harm than good. The hospitals became centres of infection from which the disease spread throughout the community. Gradually this lesson was learned, sometimes with reluctance and often with disputation as to the nature of the hospital influence, whether aërial or by contact. Epidemiologists should read the report in the *Transactions* of the Epidemiological Society (vol. xxiv, 1904–5) of a two days' discussion on "The spread of small-pox occasioned by small-pox hospitals during the epidemic period 1900–1904, and its relation to atmospheric convection." There has been no opportunity of studying the question since 1904, and just possibly there may never again be a chance of having the hypothesis tested. But in fact the position now generally is that small-pox isolation hospitals are themselves isolated from the general community in addition to isolating the patients within them. With extension of rural housing and redevelopment of agriculture isolated sites may become more difficult to obtain, but a motor ambulance service enables a single well-situated hospital to serve a large area.

Their Accommodation.—Not only is the position of such hospitals of importance, but so also is the amount of their accommodation; and here it is practically impossible to state how many beds may be required for a given population in presence of an epidemic, so much depends on factors which cannot be measured. The infectivity of the disease, the promptitude and skill which are exercised in grappling with it, the circumstances of the locality in which it occurs, and so forth, are all important factors in the position. The course to adopt, therefore, is not to erect any very great amount of ward accommodation, but to have as the centre of the hospital scheme an administrative block which will serve for a large staff, and a large amount of ward accommodation. Also, there should be sufficient ground attached to the hospital to permit of quick extension. The situation of possible future ward blocks should be definitely laid out and the ground prepared so that so-called temporary buildings can be quickly erected. For small-pox I have always preferred that ward pavilions not expected to be often in use should be constructed of wood and iron. Such materials do not gather damp as sandstone does, and are more easily heated up and put into proper condition for occupation.

Their Management.—It is necessary to go into a little more detail here. Assuming the hospital to be in a safe situation, thoroughly competent management can go far to removing risk of danger. Vaccination again takes the first place. The staff, both resident and visiting, should be rendered immune; so should ambulance drivers, and all, such as carriers of provisions and stores, gardeners, etc., who have any reason to visit the hospital. Steps have to be taken also to prevent the conveyance of infection indirectly, as by clothing or person. The ambulance van in a city should not use busy streets liable to blocking of traffic when curiosity would gather passers by around the van. Quiet unobstructed side streets should be chosen for rapid transit. Theft from the hospital laundry should be carefully guarded against. Emergency nurses should not be employed, but only the trained and trusted staff who have been engaged in nursing other infectious diseases for the public health authority. It is an excellent arrangement, as under Dr. Claude Ker in Edinburgh, to get the nursing staff to forego their usual daily or weekly leave. They should be encouraged to remain within the grounds for a month or even more, and then there should be thorough disinfection prior to several days' continuous leave. The usual precautions as to overalls and caps should, of course, be observed. Goods for the hospital should be brought only within the gate and then taken in by the resident staff. There should be a separate gate for such traffic independently of the patients' gate. Letters regarding patients and official communications of any kind should be dictated by telephone to the local health office and then transmitted in writing. Visits to patients should be strictly limited, though in the case of a dying patient a visit cannot be refused, even if the visitor declines vaccination. He can at least be protected by overalls and subsequently dealt with as a contact.

Emergency Arrangements. — Small-pox should have a hospital to itself, but sometimes even yet local authorities are not so provided, and a safely situated hospital for ordinary infectious disease has to be utilized. In presence of small-pox in a county area I have repeatedly arranged for several local authorities to devote one of their institutions to small-pox, and for ordinary infectious diseases belonging to the district served by it to be treated at other hospitals in the county. This is made easier in practice by the fact that in the early stage of the disease at which a case is ordinarily diagnosed, the patient can safely be removed for quite a long distance in an ambulance wagon; and of course motor ambulances reduce the difficulty to a minimum. Where, however, circumstances make it necessary to treat small-pox in a hospital containing cases of other diseases, the position need not be despaired of. The vaccinal condition of all patients can be ascertained, and permission asked to vaccinate those who require it. If this is refused in any case the patient may probably be in a condition permitting discharge from the hospital, preferably to another hospital. Sometimes, however, a patient may be too ill for vaccination, and a certain amount of risk may be unavoidable. If so, it is part of the price that has to be paid for lack of vaccination or of a separate small-pox hospital. In Leicester, after its Method was departed from, in addition to having a small-pox hospital, the expedient was resorted to of commandeering, for small-pox, the whole of the ordinary infectious diseases hospital, by sending home all removable cases, whatever they might be suffering from. This was followed in 1892 by an extensive epidemic of scarlet fever. On another occasion in the same town such extension did not take place. Anyhow it will be agreed that small-pox is more to be feared than scarlet fever, and should have preference in isolation.

Ineffective Isolation.—Where a small-pox epidemic gets out of hand it quickly becomes futile to attempt to control it by hospital isolation, and efforts to do so are pitiably ineffective. Gloucester, Dewsbury, and Middlesbrough are cases in point.

Gloucester, taking Leicester for its guide, neglected vaccination, and surpassed even its mentor in the degree of its neglect. Also, its representatives told the Royal Commission about the cleanliness of their fine old city and called attention to its freedom from small-pox. Then when its trial came in 1895–96, though as a town of only 40,000 inhabitants it had not available the whole time of a medical officer, as Leicester had with its 200,000 population, yet with its 48 beds it had much more hospital accommodation in proportion to its size, and it set out to follow the Leicester Method. But its type of infection, unlike Leicester's, was severe, and though this made diagnosis easier, the epidemic spread. After exhausting, and more than exhausting, its 48 beds it went on adding to its provision, so that in the end it had no less than 318 beds. But all was of no avail, and it had to fall back on vaccination and revaccination, ending its experiment by becoming the best vaccinated town in the British empire. Regardless of consistency, antivaccinationists have since then attributed the epidemic to insanitation.

Dewsbury, likewise defying vaccination and defying common sense in respect of every preventive measure, hopelessly failed by panic provision of hospitals to quell its epidemic.

Even *Middlesbrough* (population 90,000), with infantile vaccination extensively practised, but without systematic revaccination, and with a severe strain of infection in its epidemic of 1897–98, gradually increased its small-pox accommodation from 14 beds to the remarkable total of 822 beds; and in the end, as bewailed by the medical officer of health, they had "twenty-two blocks of temporary buildings which nobody knows what to do with, besides an enormous amount of bedding, beds, and other materials." Under such conditions house to house visitation for vaccination and revaccination is the only means to control an outbreak.

VI. DISINFECTION.

The object of disinfection is, of course, the destruction of the poison, and this ought always to be complete. It is a routine measure, and the modern methods available are well understood and thoroughly effective. Pawnshops and laundries may require attention where articles have been received from infected houses. In towns, shelters may conveniently be provided for poor persons whilst their houses are being disinfected. For security, articles which are difficult to disinfect, such as bedding, are not infrequently destroyed, and so the mind of the authorities is relieved of all anxiety on that score. A hospital superintendent of great experience has advised me that soaking of blankets, etc., in soap and water seemed to destroy all infection. Where a navvy or a vagrant has occupied two or three different beds in a navvies' hut or common lodging-house with many inmates, disinfection is difficult and destruction expensive, but no necessary measure must be shirked on either ground. Not only may a lodger or navvy have occupied in succession two or three different beds, but there may be in succession several introductions of the disease during an epidemic period, and the difficulty is manifest of carrying out thorough disinfection in the same lodging-house or hut time after time, perhaps at a few days' interval.

REFERENCES.

[1] *Public Health*, February, 1917; and similarly elsewhere. [2] *Medical Times and Gazette*, vol. i, 1868, pp. 5 and 32. [3] *Trans. Epidem. Soc.*, 1896–97. [4] Vaccination Tract No. 12.

(*To be continued.*)

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

HERPES ZOSTER AND VARICELLA.

IN view of the recent article by Dr. R. Cranston Low in your issue of January 25th, a case of similar concomitance may be worth recording.

On January 15th three brothers were admitted to hospital all suffering from scarlet fever. The eldest, who had no previous history of chicken-pox, had well marked right-sided herpes zoster, and, in addition to impetiginous spots on face and ears, there were one or two spots on the left side of the chest, which on healing have left a scar suggestive of a varicellar condition. On January 19th, four days after admission, one of the brothers developed a definite attack of varicella, and within fifteen days the youngest child also had chicken-pox.

Liverpool. W. M. GRAY.

GONOCOCCAL PAPILLOMA OF THE UMBILICUS.

THE rarity of the following case may make it worthy of record:

S. M., a girl of 19 years, was admitted into St. Thomas's Hospital with the typical signs of a gonorrhoeal infection

of some three weeks' duration. For this period there had been not only a copious discharge from the vagina, but an abundant yellow discharge from the umbilicus. Subsequent microscopic investigation demonstrated the presence of the gonococcus in both.

In spite of treatment the umbilical discharge persisted, the peculiar feature of the case being the presence of a pedunculated papilloma which rapidly increased until, in two months, it had attained the size of a small walnut. The surrounding abdominal wall remained unaffected.

In general appearance the growth was somewhat like a raspberry, and exactly resembled the gonorrhoeal "wart," as ordinarily seen on the vulva. It entirely concealed the umbilical depression, but when drawn aside the peduncle was exposed to view. The growth was painless and not tender on palpation.

During the week before removal it became very soft and spongy, and there exuded from its surface a profuse yellow discharge, similar to that which came from around the pedicle within the umbilical pit. It is noteworthy that papillomata likewise developed on the vulva and the perineum.

Caustics and astringents proved of little value. An elliptical incision was therefore made round the parts, and the whole of the umbilicus, together with the appertaining tumour, removed; the wound healed rapidly.

THOS. ANWYL-DAVIES,
Venereal Department, St. Thomas's Hospital, London.

CILIATED (?) AMOEBA IN LIVER ABSCESS.

IN a patient suspected from clinical observation to have a liver abscess no protozoa or cysts were found on examination of the faeces. An organism was isolated from the urine which gave biochemical reactions of the paratyphoid group, but was not agglutinated by paratyphoid A or B, nor *suipestifer* or Gaertner serum. The patient died and *post mortem* a single abscess of the liver was found on the right side. It was more or less encysted; its walls were thick, firm and fibrinous. The cavity was smooth and contained pus, not chocolate coloured, but yellow and creamy. On microscopical examination of the pus, amoebae having a highly refractile ectoplasm were observed. A few red blood corpuscles were ingested in the endoplasm. The nucleus was excentric, but distinct. From the periphery of the nuclear membrane small cilia-like bodies in constant motion were evident. The movement was continuous, though at the time of observation no pseudopodia were being thrown out.

The pus was plated out and found to contain an organism similar in biochemical reactions to that obtained from the urine, as described above.

R. C. WATTS, M.D., D.T.M., D.P.H.,
Lieutenant I.M.S.(T.C.), formerly Garrett Fellow in Bacteriology, University of Liverpool.

PRIMARY SARCOMA OF THE PROSTATE IN A BOY.

CASES of primary sarcoma of the prostate seem sufficiently rare to justify a short record of a case. In the BRITISH MEDICAL JOURNAL of January 18th, 1919, Dr. Newman of Glasgow reported a case, and states that in 1858 Thompson was only able to discover 6 cases, and that in 1912 Burckhardt collected 24 cases.

A boy aged 3½ was brought from Grimsby to Dr. Nicholson on September 24th, 1918. He had had difficulty and pain on passing water for seven weeks, and had very frequently needed a catheter.

Mr. Hainworth was asked to see him with Dr. Nicholson and operation was advised. On September 26th, 1918, the bladder was opened suprapubically by Mr. Hainworth; it was normal, and the urethral opening was dilated; the prostatic urethra was occupied by a tumour the size of a golf ball, which was easily shelled out; the bladder was drained.

The specimen was sent to the Clinical Research Association. The report was: "A malignant growth having the structure of a sarcoma. It is composed of rounded or irregular cell elements in a very scanty stroma with thin-walled vessels. Large areas of it are undergoing myxomatous degeneration."

The child recovered from the operation, and was much more comfortable for some weeks, but recurrence was rapid, and death took place on December 8th, 1918.

FRANK NICHOLSON, C.B.E., M.D.Lond.,
Senior Physician, Hull Royal Infirmary.
E. M. HAINWORTH, F.R.C.S.,
Surgeon, Hull Royal Infirmary.

Reports of Societies.

THE SUPPORTS OF THE UTERUS.

A MEETING of the Section of Obstetrics of the Royal Academy of Medicine in Ireland was held on February 14th. Professor HASTINGS TWEEDY read a paper on the tendons of the uterus and their relations to the lower uterine segment. He said that gynaecologists were, or should be, agreed that the uterus owed its stability to fibro-muscular bands radiating in every direction from the muscles surrounding the os internum. These fibro-muscular bands were under the full control of the uterus; when the os opened they relaxed, when it closed they again became taut. They acted as true tendons to the muscle, and should be called "uterine tendons" rather than ligaments. These tendons constituted the true boundary between the cervix and the body of the uterus. They took up all strain from the cervix so long as they remained intact, with a closed os internum. In pregnancy the os opened and the ovum came to lie in the upper region of the cervix and beneath the uterine tendons. The cervix invariably hypertrophied at the part exposed to any continuous pressure. This pressure was exercised on it by the growing ovum, and thus the lower uterine segment formed.

Professor A. F. DIXON said the supports of the uterus were the structures in the subperitoneal tissue. Some support, in addition to that furnished by the levator ani, was necessary to prevent the uterus being thrust downwards, or telescoped into the vagina by intra-abdominal pressure. The support was mainly applied at the lateral aspect of the cervix and at the lateral fornix of the vagina. Here the subperitoneal tissue was packed with smooth muscle and connective tissue fibres, radiating outwards along with the vessels and nerves which abounded in that region. This mass of dense subperitoneal tissue lay partly between the layers of the broad ligament, where they diverged as they reached the pelvic floor. The dense mass was continuous with the muscular wall of the cervix and the vaginal fornix, and not merely adherent to those structures; in front of them it was continuous in the muscular wall of the lateral angle of the bladder, and formed the "ureteral sheath." In considering the question as to how these supports acted in maintaining the uterus it was important to recognize that they were actually continuous with, or rather parts of, the uterine and vaginal walls. Too often the uterus was regarded as a hard, inert organ, pressed upon by neighbouring structures, and supported against abdominal pressure by inert fibrous bands or fascial layers. In reality, the thick muscular uterine coat must constantly be varying in the amount of its contraction. Waves of contraction passing over its surface had been noted in lower animals, and presumably similar contractions also occurred in the living human subject. Such contractions would normally pass on into the radiating muscle strands forming the lateral cervical and sacro-uterine "ligaments." In this way the uterus should be able to make tense its connexions and supports, and possibly shift its position to some extent by traction on, or through, the smooth muscle bundles radiating from its cervix. Similarly a contraction passing into the smooth muscle fibres which formed the round ligament might be counted upon to draw the fundus uteri forwards as the blood emptied itself. In conclusion, Professor Dixon suggested that in the normal living subject the upper part of the uterus had not the "floppy" condition found in the dead subject, but that it was held in position by the action of the various bands of smooth muscle fibre radiating from it.

Sir WILLIAM SMYLY said he had known that the subperitoneal tissue contained unstriped muscular fibres, and especially in the utero-sacral folds, which had been described as retractor muscles of the uterus, but he had no idea that the tissue around the cervix, and especially that of the cardinal or Mackenrodt's ligaments, contained so much of that tissue as had been stated by Professor Dixon. His description of those fibres as originating from the substance of the uterus and radiating to their pelvic insertions sufficiently explained the fact that that tissue was not ruptured in childbirth, as it certainly would be if arranged as a diaphragm across the pelvis. If he had correctly

understood Professor Dixon, the opening of the os might be compared to that of the pupil, the cervix representing the circular fibres of the iris. If that were so, the mechanisms would be the opposite to what had been supposed, for, as the cervix dilated, the connective and muscular tissues instead of being stretched would be relaxed, their origins in the uterus being approximated to their pelvic insertions. That the cardinal ligaments were mainly responsible for holding the uterus in place could scarcely be doubted by anyone who had performed a hysterectomy. He thought Dr. Tweedy's idea that these ligaments acted like tendons to the uterus was a reasonable one; and it had always appeared to him that unless some restraining force existed the uterus would tear itself away from the vagina. Professor Dixon's statement that some of the muscle fibres were attached to the vagina probably explained the well-known fact that in cases of threatened abortion a ballooning out of the fornices accompanied uterine action.

Dr. PUREFOY did not think that these uterine ligaments, or more correctly muscles, took an active part in effecting dilatation of the cervix, though he believed they steadied it while that process was going on. Dr. Tweedy's views as to the growth of the cervix during pregnancy commended themselves as having good foundation.

Dr. SPENCER SHEILL said he thought that Dr. Tweedy's views proved the great benefits obtained by minor gynaecological operations.

Colonel CHAMBERS pointed out the method of the uterine attachments of the lateral cervical ligaments, or Mackenrodt's ligaments. In the young subject these muscular fibres could be seen to be grouped into definite bands following definite courses.

Dr. HENRY JELLETT said that very considerable information as to the nature of the supports of the uterus could be obtained from a series of horizontal sections of the pelvic contents made in the full time fetus and in the adult. In the fetus such sections showed that the urethra and base of the bladder, the vagina and lower part of the uterus, and the rectum, were united by a capsule, fibrous in appearance, to the pubic bones in front, to one another, and to the sacrum and coccyx posteriorly. As these organs increased in size, this capsule, so far as its uterine and vaginal portion was concerned, was drawn out into vertical bands, forming in the case of the uterus the utero-sacral ligaments, and in the case of the vagina the vaginal suspensory ligaments. Such a series of sections showed that in this way the major supports of the uterus were formed, and were thus constituted by the utero-sacral ligaments and the vaginal attachment, the latter being in turn held by the vaginal suspensory ligaments. Clinical proof of these supports was readily to be found when performing either Wertheim's hysterectomy or total vaginal extirpation. Both the uterine and vaginal ligaments were undoubtedly incorporated in, and formed part of, the walls of the vagina and uterus at their point of attachment, and in view of Professor Dixon's investigation they must be regarded as containing large quantities of involuntary muscle tissue.

Dr. BETHEL SOLOMONS said that the traumata found in association with prolapse of the uterus and the extensive repairs necessary proved that the two schools of thought—namely, the one which held that the "cardinal" ligaments were the chief supports of the uterus, the other which held that the pelvic floor was the chief support—were both at fault. Dr. Tweedy, with his views, and Dr. Paramore, with his views so excellently described in his recent work, might unite forces. To the clinical gynaecologist it was evident that the ligaments and the pelvic floor combined as the chief supporters of the uterus.

WRIGHTSON'S THEORY OF HEARING.

AT the meeting of the Section of Otology of the Royal Society of Medicine held on March 21st, under the presidency of Mr. HUGH JONES, F.R.C.S., Professor ARTHUR KEITH, F.R.S., gave an account of the theory of hearing set forth by Sir Thomas Wrightson in a recent book.*

Professor KEITH explained that he himself was merely responsible for the anatomical details of the inner ear. The theory had been outlined by Sir Thomas Wrightson in a presidential address to the Cleveland Institution of Engineers in 1876, but it had been quite overshadowed by the glamour attached to the theory of Helmholtz. In the Helmholtzian theory the internal ear was a sort of microscopic piano furnished with resonating strings almost ultramicroscopic in size, and some 16,000 in number. Each string or set of strings was supposed to pass into a state of vibration when its sympathetic note entered the ear. Each string or set of strings was supposed to have a corresponding nerve fibre, and these nerve fibres must be supposed to lead ultimately to a central nerve-cell station or exchange, where 16,000 nerve cells received messages from their corresponding ear strings. However satisfactory to a physicist, Helmholtz's theory from the standpoint of the psychologist or the physiologist or the anatomist was an impossibility. The strings were there, but they were so placed and so conditioned that the one thing they could not do was to vibrate. Nature had taken the utmost care to render individual vibration an impossibility. In Sir Thomas Wrightson's theory the ear acted as a single machine; it was the most minute and most delicately adjusted spring balance ever evolved, one designed not only to weigh the simplest sound wave, but also the most complex and voluminous. The ear not only weighed every fluctuation in pressure, but automatically registered and recorded the minutest variation through the hair cells or semaphores which formed an intrinsic part of the machine. The system of messages or semaphore signals transmitted from the ear might be compared to the dot-and-dash system of the Morse code, the whole of the organ of Corti being involved in the production of the code of signals. All the fibres of the auditory nerve were concerned in transmission from the ear to the brain. It was legitimate to infer that the time signals carried on this code could be deciphered and sorted out at nerve synapses in the cerebral nervous system. Thus Sir Thomas Wrightson's theory brought hearing into line with smell, taste, sight, and touch; whereas Helmholtz's theory, by presupposing that each fibre in the auditory nerve had its special function, broke the most elementary law regarding the nature of nerve conduction.

Recent advances in our knowledge of the evolution of the internal ear threw a most definite light on the mechanism of the cochlea and organ of Corti. The ear was evolved from the balancing apparatus of the primitive labyrinth; the principle which had been adopted by Nature in working out the organ of hearing was merely an extension of the principle used in the primitive labyrinth. In the lowest fishes a closed vesicle on each side of the head filled with fluid, served as the central part of the labyrinth. On its floor was a nest or island of hair cells; on the hairs was balanced an otolith; nerve fibres began in or around the hair cells. So long as a fish swam on an even keel, the ciliary semaphoric system was at rest, but if it heeled over ever so slightly, then gravity came into play; the otolith, as it answered to gravity, bent the hairlets right or left, as the case might be, and in bending the hairlets set up certain tensions or changes in the living cells to which they were attached, and these changes were transmitted as signals or impulses along the attached nerves. In that simple semaphoric apparatus there were four elements: (1) The otolith or *titillator;* (2) the hairlet or lever on which the titillator acted; (3) the sense cell on which the lever acted; (4) the nerve fibres acted on or stimulated by the sense cells. In the sense organs or signal stations of the semicircular canals—evolved for the registration of body movements—the same four elements were found. The cupola represented the titillator, though it was no longer acted on by gravity, but by mass movements of fluid, set up in the canals during movements of the head. Bárány first showed that movement of the fluid in one direction gave one set of signals; movements in the reverse direction another and reverse set of signals. With the evolution of the cochlea and the organ of hearing the same four elements were used. The titillator was the tectorial membrane; the hairlets or levers, the sense cells and nerves, were as before, save that the sense cells were now set in an elastic scaffolding of fine elastic rods and fibres. But one novel change had been introduced: in the balancing apparatus of the vestibule the sense cells were fixed; the titillator was movable. In the ear Nature had reversed the arrangement and set the sense cells on the movable basilar membrane, which responded to every displacement of fluid set up by waves of sound impinging on the inner ear. On the other hand, the titillator was no longer free, but tethered to the containing wall. Thus, in the utricular system the hairlets or levers were worked by gravity; in the canalicular system mass displacements of fluid set up by movements of the head bent the levers and gave rise to signals. In the cochlea the force employed in working the lever system was the minute displacements set up by sound waves, and the levers were bent by the field of hair cells working against the titillator or tectorial membrane.

The essential modifications required to make the otic vesicle into an organ of hearing were, first, a closed vesicle filled with fluid, and everywhere surrounded by bone of a peculiarly dense nature, except at the fenestra rotunda, without which there could be no mass displacement of the fluid. In the passage leading to that window

*See review, BRITISH MEDICAL JOURNAL, September 28th, 1918, p. 346.

was placed the organ of Corti, the apparatus for recording the displacements of fluid set up by the bone-conducted sound waves. To make the ear a more sensitive machine there was another window, the fenestra ovalis, into which was fixed a movable piston, the stapes. By a bent lever formed by the ossicles of the ear this piston was yoked to the membrana tympani, and thus the ear was rendered infinitely more sensitive to sound impulses carried by the air. Closure of the fenestra ovalis by fixation of the stapes made the ear more sensitive to bone-conducted waves; closure of the fenestra rotunda produced complete deafness. These facts could not be explained on the hypothesis put forward by Helmholtz, but found a complete explanation from the theory advanced by Sir Thomas Wrightson.

Four phases were to be recognized in the completed movement of the lever or hairlet of a sense cell. Its upright or vertical position might be regarded as one of rest, its zero position. In the first phase of a complete movement the hairlet bent towards one side—say the right; in the second it returned to its upright or zero position; in the third it bent towards the left; in the fourth it again returned to its starting position or zero. Different conditions of tensions and pressures would clearly be set up within the hair cell in each of these four phases, and each phase, it might be postulated, gave rise to a nerve impulse or signal, the signals set up varying with the duration and force of each hairlet movement. In each sound wave Sir Thomas Wrightson recognized four corresponding phases. Two of these lay in the part of the wave where the air particles were being condensed—the part in which there was a *plus* pressure; two lay in the part where the air particles were being rarefied—where there was a *minus* pressure. In phase I the pressure was rising, in phase II the *plus* pressure was falling; in phase III the *minus* pressure was increasing; in phase IV the *minus* pressure was decreasing.

Sir Thomas Wrightson's original discovery, announced in 1876, was the recognition of the fact that if it could be supposed that each phase of sound wave did give rise to an effective stimulus in the ear, then the brain was supplied through the ear with a sufficiency of data to give a complete analysis of the most complex sound. Helmholtz had supposed that such an analysis could be accomplished only on the principle of resonance. Sir Thomas Wrightson showed that there was an alternative method. That each phase of a sound wave was effective in producing a most distinctive movement of the auditory hairlets was a later discovery, but formed an essential part of Sir Thomas Wrightson's theory. It was a sequel to a neglected discovery of Sir William Bowman's, made about the year 1846, that the basilar membrane was made up of two parts—a striate zone and a hyaline zone—the latter resembling the capsule of the lens in structure and in staining reaction, and could be regarded as elastic in nature. Sir Thomas Wrightson had demonstrated that the displacements which sound waves set up in the fluids within the ear acted against the elastic resistance of the basilar membrane, and that thus each of the four phases of a sound wave, which he had originally postulated on a theoretical ground, thereby became effective in producing a separate and distinctive movement of the hairlets.

In Professor Keith's opinion, the various parts of the cochlea, of the organ of Corti, and the conformation of the various liquid passages of the ear, which were left unaccounted for on Helmholtz's theory, now received a satisfactory explanation. He had no doubt that when physiologists, psychologists, and aural surgeons had mastered the details of the new theory they would find themselves provided with clues to phenomena which were formerly inexplicable.

Sir Thomas Wrightson said that from Professor Keith's remarks no idea could be gathered as to how much was owing to him in the presentation of this theory of hearing. As a distinguished anatomist understanding every detail of the parts involved, Professor Keith grasped the idea that if a machine was required to transmit the varying pressures of a sound wave to the nerve terminations, that transmission must be of a dead-beat character.

A discussion followed.

INDUSTRIAL EMPLOYMENT OF WOMEN.

At a meeting of the London Association of Medical Women on March 11th, at Chandos Street, with the President, Lady Barrett, M.D., in the chair, a discussion took place on the effect of industrial employment upon women.

Dr. Rhoda Adamson spoke from her experience as a medical officer for seven years to a maternity hospital, most of the patients having been factory workers before marriage, and many of them charwomen afterwards. She also spoke from the point of view of three years' supervision of some thousands of women in engineering work, most of whom were wives of men in the navy, army, or air force. She emphasized the need of grading by a doctor with opportunities of seeing the different kinds of work and the importance of giving suitable employment to pregnant women, who should be taken off all night work and all work involving sudden strain. She found that the children born under these conditions were as healthy as those whose mothers did no outside work. Out of 4,000 women doing heavy work only two developed hernia. On the whole, Dr. Adamson found that industrial work was good for women, and that some who had never gone out to work before brightened up mentally, developed hobbies, and improved in health.

Dr. Janet Campbell described some of the effects of munition work on women. She said that industrial occupations were less injurious to women than to men, and that they were less liable to accident, but that women suffered more from overstrain, 50 lb. being the maximum weight which it was found advisable for most of them to handle. She said that the tuberculosis rate had risen since the war in the case of urban females, probably owing to the entrance of more women into conditions which had previously accounted for the greater incidence in urban males. The high sickness rate among working women must be attributed to poverty, lack of fresh air, long standing, and improper food. In munition work the results upon health were found to be good, owing to good wages, healthy conditions, and welfare supervision. Dr. Campbell said that the results showed that light sedentary work was by no means best, and that many women would have better health if they followed more active occupations.

Dr. Letitia Fairfield spoke from her experience in the Q.M.A.A.C. and W.R.A.F., and referred to the great value of grading for work. She attributed the higher sickness rate in women to the strain of household management being added to that of outside work, and said that women suffered more from lack of a good midday meal and good ventilation, and stood continued strain and "dope" worse than men. In her opinion the unreliability of the health of women about the age of forty was chiefly due to want of care at childbirth, and to chronic toxaemia due to dental disease, and both of these causes should be prevented. She said that no industrial work was harder than a woman's work in a poor home, with all the washing and cleaning and half a dozen children to mind.

Dr. C. M. Peake spoke of her experience in the Q.M.A.A.C. She said that as women had less muscular power and less leverage owing to less height, there was a need of adapting machinery and equipment to their use. She held that it ought not to be necessary for any one to lift heavy weights or work in cramped positions.

Dr. Pillman Williams gave statistics in reference to her three years' work as medical officer to a filling factory where 9,000 girls were employed. She found that the sickness rate in one section went down, when night work was stopped, from 24.2 per cent. to 20.24 per cent. a week.

Reviews.

THE HISTORY OF ST. BARTHOLOMEW'S HOSPITAL.

[Second Notice.]

In the first notice (British Medical Journal, March 1st, p. 253) of Dr. Norman Moore's *History of St. Bartholomew's Hospital*[1] the early years of the institution and the general conditions which influenced its progress were considered. In the present article we propose to deal with the second volume of the work, which gives the history of the hospital after it had been placed upon a sound basis. It is probable that this volume will appeal to a wider circle of readers, for there the progress of the institution as a great force in the history of medicine is fully described. For another reason, also, the volume will be particularly welcome, for it affords the author an opportunity for the exercise of his well-known ability in writing medical biography, an

[1] *The History of St. Bartholomew's Hospital.* By Norman Moore, M.D. Two vols. London: C. Arthur Pearson, Ltd. 1918. (Demy 4to, Vol. i, pp. xxii + 614; Vol. ii, pp. xiii + 992. £3 3s. net.) The book is a present from the author to St. Bartholomew's Hospital, and the proceeds from its sale will be given to the hospital.

opportunity of which he has availed himself to the fullest extent.

When the final dissolution of the religious houses took place St. Bartholomew's remained closed for several years, but was reconstituted in 1544, and in 1547, by a grant of King Henry VIII, the hospital and its endowments became vested in the mayor, the commonalty, and the citizens of London. The excellent rules for its management drawn up on that occasion have served as a model for those by which it has been administered with but slight alteration down to the present day. The time was ripe for new methods. Old institutions, for good or for ill, had been swept away. The so-called "new learning," with progress and utility inscribed upon its banners, had just displaced the old scholasticism with its sterile logic little calculated to contribute to the happiness of mankind. On the ruins of the old order was raised the great hospital as we know it to-day. All this is described with great ability in the chapter entitled the "New Order," one of the best in the book; we commend it to those who would know the true history of the rebirth of the hospital. The judgement of mankind justly reprobates the ruthless and turbulent methods of Henry VIII when destroying the old order, but St. Bartholomew's Hospital is an instance in which the King's hand when dealing with its property was light. Dr. Moore when speaking of the grant by the King in 1547, observes, "Thus do we commemorate this destroying King, who might have taken away all the estate of St. Bartholomew's, but only took a small portion of it."

The chapters dealing with John Cok's cartulary, the ledgers, and the journals, are of great value, for the former enables us to understand the nature and position of the property of the hospital, while the ledgers and journals present us with a picture of its financial state and internal management. From an inspection of the ledgers it appears that, when once the hospital was established in 1547, its financial career was one of almost uninterrupted progress. In the last half of the sixteenth century the income varied between fifteen hundred and two thousand pounds a year, while in 1734, we are told, this sum had risen to about twenty thousand pounds; the improvement was steadily maintained until, at the present time, the annual income is some sixty-seven thousand pounds.

The eighteenth chapter deals with Dr. Caius and his long residence within the precincts of the hospital, and from this point onwards the rest of this second volume is devoted to a consideration of the medical aspects of the charity. It is here that Dr. Moore will particularly delight the student of medical biography and history. The method he adopts in describing the careers and characters of physicians and surgeons who have been connected with the hospital is happy. Taking as types the two great names of Harvey and Abernethy, he gives a full account of the lives of these distinguished members of the hospital staff, and then describes the activities of their successors. It may be said that the reputations of Harvey and Hunter have laboured under the disadvantage that their praises have been sung by generations of annual orators, some of whom it is true have not been too well endowed with the spirit of veneration and the knowledge of medical history. It is difficult to present the work and character of the "glory of English medicine" from a new point of view. Dr. Moore, however, has given a charming chapter on Harvey, erudite and accurate, and not the least part of its excellence is the veneration he exhibits for its great subject.

The services of physicians were not sought until some years after the reconstitution of the hospital in 1547, probably, as Dr. Moore thinks, because the funds were insufficient. Surgeons, however, were employed from the first, and were solely responsible for the treatment of the patients until, about 1568, Dr. Roderigo Lopus was appointed the first physician to the hospital. Lopus expiated the crime of high treason at Tyburn, and was succeeded by other physicians of the Elizabethan age, none of whom appear to have been greatly distinguished, with the exception of Dr. Timothy Bright, who is remembered as the inventor of a system of shorthand. With the appointment of Harvey to St. Bartholomew's, the long line of celebrated physicians may be said to have begun, and full information concerning their activities will be found in the chapter entitled "The Successors of Harvey." Many great physicians, such as Micklethwaite, Edward Browne, the Pitcairns, and the Lathams, to mention only a few, have belonged to the staff of St. Bartholomew's, and although the chief incidents in their careers are known, in these pages we are given much new information regarding their special connexion with the hospital they served so well.

In the same manner the members of the surgical staff are treated, and special consideration is given to the biographies of the three outstanding men on the roll of the surgeons attached to the hospital—Percivall Pott, John Abernethy, and Sir James Paget. The chapter on the "Surgeons of the Old Guild" is most instructive, and excellent accounts are furnished of Clowes, Woodhall, Charles Bernard, and Freke, besides brief biographies of others little known and almost forgotten. The obstetricians and the apothecaries claim also a share of attention, and it is remarkable how many great names in obstetrics, such as Gooch, Conquest, West, and Matthews Duncan, are found in the chronicles of the staff. Great interest attaches to the accounts given of those members of the hospital staff who were well known in recent years, at whose feet some of us have received our first instruction in the art of medicine. Those who have had personal knowledge of these latter-day physicians and surgeons will read the biographies with pleasure, for they will often be able to recognize the train of thought that inspired the written word.

In the chapter describing the medical school is given the origin of that important part of the hospital's activities, while other chapters deal with the hospital buildings, the officers, the nursing staff, and the patients. In fact, every feature of the hospital is reviewed, and the book appears to be complete in every detail.

It might well serve as a model of the way in which the history of a great medical charity should be written. Although St. Bartholomew's is the oldest hospital in London, and therefore entitled, from the historical point of view, to take the first place, many others exist of sufficient importance and antiquity to demand an investigation of their records. We know little or nothing concerning the past history of these hospitals, and yet the material is ready to the hand of the enthusiastic and industrious medical historian. Historians have ably recorded the debt human intelligence owes to the fostering care of the universities through the centuries, and it is high time that similar service should be rendered to the hospitals for their care of the halt, the sick, and the lame, and for the opportunities they provided for the education of succeeding generations of students. This book, we may hope, will stimulate others to unravel the histories of the hospitals they serve, and so contribute to the foundations, now making rapid progress, of a complete history of medicine in the British Isles. In parting from this excellent work we desire to congratulate Dr. Norman Moore, and to express our opinion of its value in the words of King George III, who, after reading Burke's *Reflections on the Revolution in France*, said, "This is a good book, a very good book, and everybody should read it."

RADIOLOGY OF THE HEAD.

THOSE interested in the possibilities of radiography in head conditions will find STOCKING'S translation of SCHULLER'S monograph on the *Roentgen Diagnosis of Diseases of the Head*[2] of great value. The book is essentially German in its construction, its wealth of detail, its extensive bibliography, and in its heaviness; nothing appears to have been overlooked; no small detail—important or otherwise—has been omitted; and the fact remains that when the reader has come to the end he will feel that apparently the last word on the subject has been written.

The material on which the book is based comes from two sources—namely, *x*-ray pictures of the normal and pathological skull and from clinical cases (some 5,500 in all)—and it is the result of ten years of work.

Following a short introductory chapter, historical and technical, the main thesis is divided into two parts. The first of these treats of the irregularities in the development of the skull, the anomalies of size and shape following on disturbances in the growth of the skeleton, the changes in bone structure due to inflammation and new growths, and

[2] *Roentgen Diagnosis of Diseases of the Head.* By Dr. Arthur Schuller, Head of the Clinic for Nervous Diseases at the Franz-Joseph Ambulatorium, Vienna. Authorized translation by Fred. F. Stocking, M.D. London: Henry Kimpton. 1918. (Med. 8vo, pp. 305; 97 figures. 21s. net.)

injuries of the skull. The second deals with the pathological changes in the brain which can either be shown directly, or which cause alterations in the bones of the skull. The changes which can be visualized by *x* rays in the nose, ear, eye, and teeth are discussed in an appendix; and the book is completed by a bibliography which fills some thirty-four pages.

Throughout there is constant evidence of the author's recognition of the limitations of *x*-ray diagnosis, or rather of the limitations of the value of *x*-ray shadows in intracranial conditions, and it is pointed out that, save in exceptional cases, pathological changes in intracranial organs, such as abscesses, exudates, cysts, haematomata, and soft tissue tumours, do not permit of direct exhibition on the *x*-ray negative; the reasons for this, and also the reasons for varying areas of density showing in the brain region on the negative, are pointed out. Radiologists would do well to make a complete study of pages 158 and 159, which bear on this part of the subject.

Attention should also be given to remarks on the value of an *x*-ray examination in cases of epilepsy; putting aside those in which trauma comes into the case—all of these should, of course, be radiographically examined—it is pointed out that the result of systematic *x*-ray examination in epileptics tends to confirm the present day belief that the domain of so-called genuine epilepsy is becoming more and more limited as compared to epilepsy with anatomical findings. Important information regarding operative or non-operative treatment can be obtained, and positive *x*-ray findings are observed in the skull in 30 per cent. of all epileptics.

The illustrations throughout are good, but many of the radiographs hardly reach the level of the highest class of skull radiography; this is especially the case in those dealing with the portrayal of the sella turcica. The plan has been adopted of reproducing, side by side, the radiograph and a drawing, the latter designed to demonstrate the essentials of the former from the pathological point of view. In outlining the method of *x*-ray examination it is very noticeable that no mention is made of stereoscopic radiography, and it is possible that the author would have modified his views as to the value of radiography in the diagnosis of defects of the brain itself if he had had the advantage in these cases of stereoscopic plates taken from both sides of the head.

NOTES ON BOOKS.

THE official *Home Nursing Handbook* of the St. John Ambulance Association[3] has been compiled by a medical committee mainly from the manuscript of Miss M. HEATHER-BIGG, matron of the Charing Cross Hospital. It is a very sensible, clear, and practical pocket volume of reference, conveying the rudiments of the art of nursing in the form of simple rules for the treatment of illness or accident in a private house. The need for loyal co-operation with the medical attendant is insisted upon throughout.

[3] *Home Nursing, arranged according to the Revised Syllabus of the St. John Ambulance Association.* By Mildred Heather-Bigg, R.R.C. London: St. John's Gate, Clerkenwell, E.C.1. 1918. (Pp. 272. 1s. 6d. net; by post 1s. 8½d.)

THE INDIAN SCIENCE CONGRESS.

(*Continued from p. 346.*)

THE Indian Science Congress, which met in Bombay from January 13th to 18th, under the presidency of Lieut.-Colonel Sir Leonard Rogers, F.R.S., I.M.S., as already reported, had four sections—agriculture and applied botany, physics, mathematics, and, for the first time, medical research; of the last named we propose to give a brief account.

Medical Research.

The president of this section, Lieut.-Colonel Glen Liston, I.M.S., gave an introductory address on "The next war: man *versus* insects," a title borrowed from an article by Sir Harry Johnston, pleading for a wider knowledge of the subject of entomology. Lieut.-Colonel Glen Liston said that in India two-thirds of the preventable diseases were to be attributed to the agency of insects. He referred to the early want of encouragement in India of research into the application, for the protection of troops, of the discovery that malaria was carried by anophelines, and mentioned the impetus given to its study by the conference organized by Colonel Buchanan, I.M.S., in connexion with the Royal Society's Commission, consisting of Stephens, Christophers, and James, working in India. He then turned to the relation of the flea to plague, and referred to the great extension of the work at Parel Laboratory, due in large measure to the assistance and work of the Plague Research Commission and the personal influence of Dr. C. J. Martin. After sketching the objects of the Research Defence Fund, he pointed out that work done in the laboratory and that accomplished in the hospital and in the field could not be regarded as distinct. Co-operation was necessary, and the work of the Plague Research Commission had been so fruitful largely because the laboratory work had been combined with work in the field and in the hospital. But co-operation was not enough; men and money and means were required, and not only men, but leaders of men. In research each individual now worked independently and published his results sometimes too hastily without co-ordination. With regard to finance, in medicine the cost of the task was almost always underestimated, and too often the attack on disease degenerated into guerilla warfare. On one occasion only in the history of India had an adequate measure been taken of the task to be done; when vaccination for the prevention of smallpox was introduced a scheme was properly thought out and money provided, and even to-day more than half of the total sum expended on the prevention of disease in rural India was absorbed in fighting this one disease. In twenty years more than ten million lives had been sacrificed to plague—an easily preventable disease—and it ought to be clearly recognized that money spent on efficient health administration was in a very special sense remunerative. Munitions were required to win this war against disease, and India had been very badly provided with medical munitions. Every medical man in India should possess a microscope, which in a tropical country was an essential instrument.

After the address, papers were read on the breeding places of phlebotomus in Lahore, by Mr. J. L. Mitter; on a mosquito survey of Indore City, by Mr. M. P. Tirunarayana Ivengar; and on hydrocyanic acid gas as an insecticide, by Lieut.-Colonel Glen Liston and Dr. Gore. Solutions of potassium cyanide and sulphuric acid were used for generating the gas; the solutions were conducted into the room to be treated through tubing and mixed in a flat dish. It was found that 30 parts of hydrocyanic acid in 100,000 parts of air within a room sufficed to kill bugs and lice at all stages of development, including eggs, provided an exposure of two hours was given. As clothing led to diminution of concentration, it was necessary to estimate the gas strength in the room; an apparatus for doing so was described.

A paper on beri-beri was read by Major-General Hehir, I.M.S., who gave a description of the outbreak of beriberi during the siege of Kut. It led to 155 admissions, but affected only the British troops. No case occurred among the Indian garrison, but they suffered severely from scurvy. The great majority of the cases of beri-beri occurred during the first three months of the siege, though the food ration was then better than at a later stage, both in quantity and variety. All but two of the men affected had been in Mesopotamia from an early stage of the expedition. Non-commissioned officers and privates were equally affected, and there were two cases among British officers. Severe continuous exercise appeared to precipitate the disease, which in a number of cases was preceded by diarrhoea or gastro-intestinal disturbance. The case mortality was 15 per cent.; 50 per cent. returned to duty after an illness of six weeks to two months, others were invalided. An intimate association was traced between the prolonged use of tinned meat and rationed biscuits, or white bread, by British troops and the occurrence of beriberi. Owing to the fact that the Indian troops had scurvy and the British troops had beri-beri, a comparison of the diet was of interest. British troops ate horseflesh; the Indians did not; Indian troops used *dal;* the British did not. The British used white flour or biscuits for a large part of the time; the Indians throughout ate *ata* or barley flour. A relatively large issue of horseflesh towards the end of the siege probably accounted for the disappearance of the disease at that time. It seemed that the British troops were protected from scurvy by the ample ration of meat or

SPECIAL CLINICAL MEETING, LONDON, 1919.

APRIL 8th, 9th, 10th, and 11th.

NOTIFICATION OF ATTENDANCE.

All Members of the Association who propose to attend the **Special Clinical Meeting** are earnestly requested to fill up and post this form as soon as possible.

Notices on matters of interest to those attending the Meeting will appear from time to time in the *Supplement* or the *Journal*.

Early intimation will greatly facilitate the arrangements for official entertainments as well as for private hospitality offered by members of the Association living in London.

OFFERS OF HOSPITALITY BY ST. THOMAS'S HOSPITAL.—In the event of members of His Majesty's Forces and others attending the Clinical Meeting in London being unable to obtain sleeping accommodation, the Treasurer and Governors of St. Thomas's Hospital have set aside the beds (60) in two vacant wards and will be able to provide breakfast. Early application should be made to the Honorary General Secretaries, Special Clinical Meeting, 429, Strand, W.C. 2.

It is my intention to be present at the SPECIAL CLINICAL MEETING in LONDON and

Please write distinctly.

*I expect to be accompanied by*_____

*Name*_____

*Address*_____

I would like to attend the RECEPTION by the PRESIDENT at the GUILDHALL on April 8th.

" " " CONVERSAZIONE given by the ROYAL SOCIETY OF MEDICINE on April 9th.

For these Entertainments, to which ladies will be admitted, the accommodation is limited, and it may be necessary to ballot for tickets. Please indicate your order of preference and whether you will be accompanied by a lady.

DINNER.

A Dinner, to which ladies may be invited, will be held at the CONNAUGHT ROOMS, GREAT QUEEN STREET, W.C. (near Lincoln's Inn Fields), on THURSDAY, APRIL 10th, at 7.30 p.m. Applications for tickets should be made at once to the Secretaries of the Special Clinical Meeting, British Medical Association, 429, Strand, W.C. 2. The price of the Dinner Ticket, 10s. 6d. each, should be remitted by Postal Order with the application. As the number of Tickets is limited early application should be made.

Please reserve a seat for me at the Dinner, for which I enclose a remittance of 10s. 6d.

*Signature*_____

[See next page.

GENERAL ARRANGEMENTS.

THE arrangements for the special clinical and scientific meeting of the British Medical Association to be held in London from April 8th to the 11th have been made by a committee of which Sir T. Clifford Allbutt, K.C.B., F.R.S., President of the British Medical Association, is chairman; it includes the Presidents of the Royal Colleges of Physicians and Surgeons in London; Sir William Osler, Regius Professor of Medicine, Oxford; the Directors-General of the Medical Departments of the Royal Navy, of the Army Medical Service, of the Army Medical Services, France, and of the Canadian Army Medical Service, the Director of Medical Services of the Australian Imperial Force, representatives of the medical services of New Zealand and South African overseas forces, the Medical Adviser to the Secretary of State for India, and the D.M.S. Royal Air Force.

LEAVE FOR OFFICERS.

The Director-General, Army Medical Service, has notified the Home Commands that special consideration is to be given to applications by medical officers for leave to attend the meeting. A similar notification has been issued by the Director-General, Medical Services, Overseas Forces of Canada.

ACCOMMODATION.

Hotel accommodation in London is difficult to obtain: many of the large hotels are still occupied by various Government departments, and the others are very full. Private hospitality will be offered by members living in London, but the full extent to which such hospitality will be available has not at present been ascertained. Meanwhile, those who intend to be present at the meeting are advised to secure rooms as early as possible. The offer by St. Thomas's Hospital is mentioned on p. i.

ENTERTAINMENTS.

A reception arranged by the *Metropolitan Counties Branch* of the British Medical Association will be held at the Guildhall, London, kindly lent by the Lord Mayor, on the evening of Tuesday, April 8th. The guests will be received by Sir T. Clifford Allbutt, K.C.B., F.R.S., Regius Professor of Physic, University of Cambridge, President of the British Medical Association.

On Wednesday evening, April 9th, the *Royal Society of Medicine* will hold a reception at its house, 1, Wimpole Street, W.1. The guests will be received by Sir H. D. Rolleston, K.C.B., President of the Society.

On Thursday evening, April 10th, a *Dinner* will take place at the Connaught Rooms (10s. 6d. without wine).

Ladies may be invited to these entertainments, including the dinner. Academic or evening dress or uniform can be worn at the receptions at the Guildhall and the Royal Society of Medicine. The number of invitations which can be issued is in each case limited, and early application should be made.

The President of the *Royal College of Surgeons of England* will hold a reception at the College, Lincoln's Inn Fields, on Wednesday, April 9th, from 4.30 to 6 p.m., when there will be an exhibition of Hunterian and Listerian relics, etc. Tea will be served at 4.30 p.m.

The President and officers of the *Royal College of Physicians of London* will receive members who would like to see the portraits and books at the College on Thursday, April 10th. Tea will be served at 4.30 p.m., and at 6 p.m. Sir H. D. Rolleston will give a Lumleian Lecture on cerebro spinal fever in the Library.

Stamp.

The SECRETARIES,
Special Clinical Meeting,
British Medical Association,
429, Strand, London, W.C.2.

PROVISIONAL PROGRAMME.

The meetings of the Sections will be held at the Imperial College of Science and Technology, South Kensington, which has been placed at the disposal of the Association by the Rector, Sir Alfred Keogh, G.C.B., M.D.

SECTION OF MEDICINE.

DISCUSSIONS will be held as follows:

Wednesday, April 9th.—10 a.m. to 1 p.m.

War Neuroses.—Chairman: Sir DAVID FERRIER, M.D., F.R.S. Introducer: Lieut.-Colonel F. W. MOTT, F.R.S., R.A.M.C.

Thursday, April 10th.—10 a.m. to 1 p.m.

Influenza.—(In conjunction with the Section of Preventive Medicine and Pathology, *q.v.*) Chairman: Colonel HAVEN EMERSON, Medical Corps, U.S.A. The subject will be treated under the following headings:

1. Clinical Aspects. Introduced by Major-General Sir WILMOT HERRINGHAM, C.B., A.M.S.
   (*a*) Short account of epidemics of 1918 in France. Contrast between clinical features of spring and autumn epidemics—for example, respiratory complications.
   (*b*) Epidemic in England. Contrasts and resemblances to above.
2. Epidemiology. Introduced by Captain M. GREENWOOD, R.A.M.C.
3. Etiology. Introduced by Major F. B. BOWMAN, C.A.M.C.

N.B.—The pathological aspects will be treated by means of demonstrations.

Friday, April 11th.—10 a.m. to 11.30 a.m.

Venereal Disease.—Chairman: Sir WILLIAM OSLER, Bt. The subject will be introduced by Brevet Colonel L. W. HARRISON, D.S.O., K.H.P., Lecturer in Venereal Diseases, Military Hospital, Rochester Row. A discussion will follow.

11.30 a.m. to 1 p.m.

Prognosis in Cardio-vascular Affections.—Chairman: Sir JAMES MACKENZIE, M.D., F.R.S. Introducer: Dr. THOMAS LEWIS, F.R.S. A discussion will follow.

DEMONSTRATIONS.

The following demonstrations have been arranged to begin at 2.30 p.m. on each day:

Wednesday, April 9th.

Neurological Cases. National Hospital for Paralysed and Epileptic, Queen Square.
Diseases of the Chest. Brompton Hospital.
Mine Gas Poisoning. Lieut.-Colonel D. Dale Logan, D.S.O., R.A.M.C.

Thursday, April 10th.

Newer Methods in Cardio-diagnosis. National Heart Hospital, Westmoreland Street, Marylebone.
Cases and Specimens illustrating Cardio-vascular Disease. Dr. Thomas Lewis, F.R.S., at University College Hospital.
Drawings of Throat in various Acute Infectious Diseases. Dr. H. Drinkwater, at St. Thomas's Hospital.

Friday, April 11th.

Air Force Tests at Royal Society of Medicine.
War Neuroses. Lieut.-Colonel F. W. Mott, F.R.S., Maudsley Clearing Hospital, Denmark Hill. A discussion will follow. Cinematograph demonstration by Lieut.-Colonel A. F. Hurst, R.A.M.C., of illustrative cases.
Interesting cases by members of the staff of the Hospital for Sick Children, Great Ormond Street.

Venereal Disease.—On each day there will be a demonstration at the Military Hospital, Rochester Row, by Colonel L. W. Harrison, D.S.O. The demonstration will be in three parts, each lasting half an hour. Visitors are requested to attend the parts in the order specified on the slips which will be handed to them at the door.

A. *Syphilis:*
1. Examination of patients.
2. Spirochaete specimens under dark-ground illuminations.
3. Apparatus for the administration of antisyphilitic remedies.

B. *Prevention of Venereal Disease—Gonorrhoea:*
1. Early Treatment.
2. Abortive Treatment.
3. Irrigation.
4. Instruments for the diagnosis and treatment of chronic gonorrhoea.
5. Cases of interest.

C. *Laboratory:*
Microscopical specimens.
Complement fixation in Gonococcal Infections.
" " " Syphilis.
Gonococcal Vaccines.

Secretaries of Section.—Colonel R. J. MILLARD, C.M.G., D.D.M.S., A.A.M.C., 429, Strand, W.C.2, and Dr. H. BATTY SHAW, 122, Harley Street, W.1.

SECTION OF SURGERY.

Discussions on the following subjects have been arranged to take place in the morning of the day indicated.

Wednesday, April 9th.

Gunshot Wounds of the Chest.—Chairman: Sir GEORGE MAKINS, G.C.M.G. Introducers: Colonel T. R. ELLIOTT, D.S.O., F.R.S., and Colonel G. E. GASK, C.M.G., D.S.O.

Thursday, April 10th.

Wound Shock.—Chairman: Sir ANTHONY BOWLBY, K.C.M.G. Introducers: Professor W. M. BAYLISS, F.R.S., and Dr. H. H. DALE, F.R.S.

Friday, April 11th.

A Review of Reconstructive Surgery.—Chairman: Sir ROBERT JONES, C.B. Introduced by Major R. C. ELMSLIE and Major W. R. BRISTOW, R.A.M.C.

DEMONSTRATIONS.

Wednesday, April 9th.

2.30 p.m.—On Orthopaedic Methods, etc.; at the Special Surgical Hospital, Shepherd's Bush.
2.30 p.m.—At the Royal College of Surgeons, Colonel J. G. Adami, F.R.S., C.A.M.C., for Major Rhea, C.A.M.C.: Bone Inflammation and Bone Repair.
3.30 p.m.—At the Royal College of Surgeons, Specimens illustrating Wounds of Arteries, by Sir George Makins.
4.30 p.m.—Reception at the Royal College of Surgeons—Hunterian and Listerian Relics.

Thursday, April 10th.

2.15 p.m.—Cases of Plastic Surgery of the Face, by the staff of the Queen's Hospital, Sidcup; at the Imperial College of Science, South Kensington.

3.15 p.m.—Cinematograph Lecture illustrating the Organization of a Hospital for Limbless Cases, by Sir John Lynn-Thomas; at the Imperial College of Science, South Kensington.

3.30 to 4.30 p.m.—Professor Arthur Keith, F.R.S.: Specimens illustrating Fractures of the Skull; at the Royal College of Surgeons.

4 p.m.—Cinematograph Lecture on the Treatment of Fractured Femur, by Major Pearson, S.A.M.C.; at the Imperial College of Science, South Kensington.

Friday, April 11th.

2.30 p.m.—On Orthopaedic Methods, etc.; at the Special Surgical Hospital, Shepherd's Bush.

2.30 p.m.—Material at the Army Medical War Museum, 5, Avenue Studios, 76, Fulham Road, S.W.1, by Lieut.-Colonel F. S. Brereton, R.A.M.C.

2.30 p.m.—Colonel W. T. Lister, C.M.G.: Demonstration of Specimens illustrating War Injuries of the Eye; at the Royal College of Surgeons.

3.30 to 4.30 p.m.—Mr. C. Wallace, C.B.: Specimens illustrating Gunshot Wounds of the Abdomen; at the Royal College of Surgeons.

Secretaries of Section.—Mr. C. H. S. FRANKAU, D.S.O., F.R.C.S., 57A, Wimpole Street, W.1; Mr. C. MAX PAGE, D.S.O., F.R.C.S., 134, Harley Street, W.1.

SECTION OF PREVENTIVE MEDICINE AND PATHOLOGY.

Discussions have been arranged for the morning meetings on the following subjects:

Wednesday, April 9th.—10 a.m. to 1 p.m.

The Dysenteries: Bacillary and Amoebic.—Chairman: Colonel S. L. CUMMINS, C.M.G., A.M.S. Introducers: Colonel L. S. DUDGEON, C.M.G., A.M.S., and Professor W. YORKE.

Thursday, April 10th.—10 a.m. to 1 p.m.

Influenza.—(At a joint meeting with the Section of Medicine, *q.v.*)

Friday, April 11th.—10 a.m. to 12 (noon).

Malaria.—Chairman: Sir RONALD ROSS, K.C.B., F.R.S. Introduced by Lieut.-Colonel S. P. JAMES, I.M.S. A Demonstration on malaria and an exhibition of specimens, arranged by Sir Ronald Ross.

12 (noon) to 1 p.m.

A communication will be made on a "Filter-passing" Virus in Certain Diseases, with especial reference to Polyneuritis, Encephalitis, Trench Fever, Influenza, and Nephritis, by Major-General Sir JOHN ROSE BRADFORD, K.C.M.G., C.B., F.R.S., A.M.S., Captain E. F. BASHFORD, R.A.M.C., and Captain J. A. WILSON, R.A.M.C.

DEMONSTRATIONS.

Demonstrations have been arranged to take place in the afternoon, beginning at 2.30.

Wednesday, April 9th.—On Malaria. At the London School of Tropical Medicine.

Thursday, April 10th.—On the Pathology of Dysentery, by Colonel L. S. Dudgeon; Entamoebae, by Professor W. Yorke and Dr. F. W. O'Connor; The Local and Remote Effects of Injections of Quinine on Tissues, by Colonel L. S. Dudgeon. At St. Thomas's Hospital, Albert Embankment.

Friday, April 11th.—On the Anaërobic Bacteria which Infect Wounds, together with an Exhibition of Specimens and Drawings illustrating Anaërobic Bacteria, by Miss Muriel Robertson. On the subject of Filter-passing Viruses in Influenza and other Diseases, by Major-General Sir John Rose Bradford, K.C.M.G., C.B., F.R.S., A.M.S., Captain E. F. Bashford, R.A.M.C., and Captain J. A. Wilson, R.A.M.C. On Rickettsia Bodies, by Dr. J. A. Arkwright. At the Lister Institute of Preventive Medicine, Chelsea Gardens.

Secretaries of Section.—Dr. J. A. ARKWRIGHT, Lister Institute of Preventive Medicine, Chelsea Gardens, S.W.1; Major A. M. W. ELLIS, C.A.M.C., 429, Strand, W.C.2.

POPULAR LECTURE.

A popular lecture, on A Casualty Clearing Station at Work, will be given by Major-General Cuthbert Wallace, C.B., C.M.G., Surgeon to St. Thomas's Hospital, at the Queen's Hall, Langham Place, W., on April 9th, at 5 p.m.; the chair will be taken by Sir John Goodwin, K.C.B., Director-General Army Medical Service.

EXHIBITION.

An exhibition of surgical instruments, hospital furniture, drugs, foods, sanitary appliances, etc., will be held in the Physics Examination Hall, Imperial College of Science and Technology, South Kensington, from Wednesday, April 9th, to Friday, April 11th, both days inclusive. Information as to space, which is being rapidly allotted, can be obtained from Mr. W. E. Warne, Acting Financial Secretary and Business Manager, 429, Strand, W.C.2.

THE WAR COLLECTION AT THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

The collection of pathological specimens from the seat of war in France will be on view daily from 10 till 6 (on Saturday 10 till 1) at the Royal College of Surgeons, Lincoln's Inn Fields, W.C.2. It comprises a large and complete series of gunshot fractures of the bones; and another series, equally complete, of gunshot injuries of the different organs and soft structures, as well as specimens of disease incident to warfare, the effects of gassing, trench nephritis, gas gangrene, etc.

Special demonstrations, each occupying about one hour, will be given at the College on each day, as notified under the Section of Surgery.

COTTAGE HOSPITALS.

There will be an exhibition at the Imperial College of Science of plans of Cottage Hospitals, kindly lent to the Association by architects. It is also hoped to exhibit plans and photographs of two military hutted hospitals.

GENERAL SECRETARIES.

The General Secretaries of the meeting are:

Mr. CUTHBERT WALLACE, C.B., C.M.G., F.R.C.S., 26, Upper Wimpole Street, W.1.

Dr. GORDON HOLMES, C.M.G., 101, Harley Street, W.1.

Mr. S. MAYNARD SMITH, C.B., F.R.C.S., 28, Wimpole Street, W.1.

The Chairman of the Programme Subcommittee is Colonel J. G. ADAMI, F.R.S., C.A.M.C., Pembroke House, 133, Oxford Street, W.1.

Communications regarding accommodation, entertainments, etc., should be addressed to the "General Secretaries of the Special Clinical Meeting," British Medical Association (Room 46A), 429, Strand, W.C.2.

horseflesh, and that the Indian soldiers, though protected from beri-beri by the nature of their cereal ration, failed to obtain a sufficient supply of antiscorbutic vitamines owing to their refusal to eat fresh meat. The absence of carbohydrates from the diet of British troops led, towards the end of the siege, to loss of weight, lowered temperature, slowing of the pulse and marked debility. A paper on the pathogenesis of deficiency disease, by Lieut.-Colonel R. McCarrison, explained the observations reported in the article by him published in the BRITISH MEDICAL JOURNAL of February 15th, 1919.

In a paper on quinine Lieut.-Colonel J. W. Cornwall, I.M.S., pointed out that great differences of opinion were to be observed in therapeutic and pharmacological text-books; in the treatment of malaria the non-selective toxic effects of quinine had been largely ignored; too much attention had been paid in India to relatively unimportant entomological side-issues, and too little to co-ordinated scientific inquiry into the pathology of malaria and the pharmacology of quinine. Major-General Hehir said that quinine was still the best remedy for malarial fevers, and that among treated cases malarial cachexia was less frequent than among an untreated population. If it failed to cure chronic malaria, quinine, if properly administered, controlled the disease.

A discussion took place on carriers of enteric diseases and amoebic dysentery. Methods of isolating the organism from faeces were described by Lieut.-Colonel Glen Liston and Dr. S. N. Gore, and by Major J. A. Cruickshank, I.M.S., and Assistant Surgeon H. M. La Frenais. The latter authors mentioned that the carriers were as a rule the fittest men in the dépôt, but usually at one time or another complained of pain over the gall bladder. During these attacks of pain the excretion of bacilli usually ceased. In the treatment of chronic carriers brilliant green by the mouth, injections of milk in some of the intestinal cases, and urotropin in the chronic urinary carrier, had been tried without benefit. Vaccines were now being tested. Captain MacAdam, R.A.M.C., in a paper on the amoebic dysentery carrier, said that in view of the nature of the changes present in the intestine in chronic relapsing dysentery it was very doubtful whether eradication of the infection could be expected from the administration of emetine in any form or by any mode. Attention should be concentrated on the thorough early treatment, by the combined hypodermic and oral exhibition of emetine, of primary acute attacks, and of cyst carriers when the signs and symptoms of ulceration of the colon were so slight as to be relatively negligible.

Papers on the rat problem were read by Majors J. G. C. Kunhardt, I.M.S., and J. Taylor, I.M.S.; the former concluded that rat destruction should be placed on a more scientific basis.

A very interesting and successful scientific *conversazione* was held at the Bombay Bacteriological Laboratory, when demonstrations illustrating a great variety of scientific subjects were given.

THE CENTRAL MEDICAL WAR COMMITTEE.

EFFECT OF RAPID DEMOBILIZATION.

THE following statement describes shortly the winding up of the work of the Central Medical War Committee:

The Committee met on March 21st, and received the following letter from the Ministry of National Service:

March 19th, 1919.

Sir,

I am directed by the Minister of National Service to inform you that, in view of the fact that a more general demobilization of medical officers from the Royal Army Medical Corps is now understood to be imminent, it has been decided to discontinue the functions of this Ministry in the selection and nomination of medical officers for release by the Service Departments concerned. This decision will take effect as from the 1st April next.

It follows that such responsibility as this Ministry has hitherto undertaken in regard to the safeguarding of the Medical Service throughout the country, and which it has been able to exercise by means of its powers and functions in connexion with the demobilization of medical officers, will cease on the same date.

You will appreciate that this decision does not affect the position of your Committee as a Medical Tribunal, so long as the Military Service Acts and the Military Service (Medical Practitioners) Regulations, 1918, remain in force. Steps are being taken to terminate on or about the same date the arrangements which have been in force in regard to secretarial and clerical assistance.

I am, Sir, your obedient servant,
(Signed) GEORGE CHRYSTAL.

The Chairman,
Central Medical War Committee.

It will be remembered that, at the request of the Ministry and in consultation with it, the Committee drew up a scheme for demobilization of medical men on personal grounds, which was based primarily on length of service and age, with due consideration for special claims which might be put forward. The Secretary of State for War has stated that the Ministry of National Service had agreed with the War Office that the restricted procedure of selection of individuals for release should be discontinued. It follows from this that the Central Medical War Committee is no longer in a position to secure the release of doctors either on public or private grounds, and that in future their demobilization will be regulated solely by the consideration of whether the War Office can dispense with their services.

On receipt of the above letter the Committee came to the conclusion that its duties as advisory body to the Ministry of National Service were necessarily terminated, and it was stated by representatives of the Committee of Reference that it had decided to adjourn *sine die*. The Scottish Committee, it is understood, will in due course issue its own statement.

Though the Central Medical War Committee has finished its work in connexion with demobilization, it will not be dissolved until the Annual Representative Meeting in July next; and in the meantime will continue, through its General Purposes Subcommittee, to assist so far as it can those members of the profession still, or recently, on service. The Local Medical War Committees are therefore being advised not to dissolve, but to adjourn and hold themselves in readiness, in case any business arises which may call for their consideration.

The following letter has been received from Sir Auckland Geddes, Minister of National Service, and has been conveyed to the Local Medical War Committees with an expression of thanks from the Central Medical War Committee for the devoted and public-spirited work they have carried on for the past four years in the interests of their professional brethren and of the country:

March 24th, 1919.

Dear Dr. Verrall,

Now that the functions of the Ministry of National Service are terminating, I wish to express to you my high appreciation of the services which the Central Medical War Committee and its Local Medical War Committees have rendered in association with my Medical Department. These services have been continuous and often arduous, but they have been of very real value and assistance to the work of the Ministry.

I have always felt that through the Central Professional Committees, with their local organization, my Medical Department has been able to keep in touch with the medical situation throughout the country, and with the needs and views of the profession itself in a manner which has greatly facilitated its administrative work.

I shall be grateful if you will convey my own personal thanks and the thanks of the Government to the members of the Central Medical War Committee, and also to the Local Medical War Committees throughout England and Wales for the important national work which they have done.

Yours truly,
(Signed) A. C. GEDDES.

T. Jenner Verrall, Esq., LL.D.

THE COMMITTEE OF REFERENCE.

The Ministry of National Service having informed the Committee of Reference that it will discontinue to exercise its functions at the end of this month, the Committee will be unable to put forward, through the Ministry, the names of members of the staffs of the London hospitals and medical schools for early demobilization. The Committee has already applied for the release of all those whose names have been supplied to it, and will still endeavour by direct application to the Admiralty and War Office to facilitate the release of those who may yet be asked for by the hospitals and medical schools. Looking to the more general demobilization determined upon by the Secretary of State for War, the duties of the Committee of Reference except as a Tribunal of Appeal may now be considered as completed. Nevertheless, the Committee will remain in existence for the present with a view to afford any assistance which may be necessary to H.M. Government and for the consideration of other matters, incidental to the war, which may be referred to it.

British Medical Journal.

SATURDAY, MARCH 29TH, 1919.

THE HOUSING BILL.

THE new Housing Bill, introduced by Dr. Addison last week, is a comprehensive measure which differs from previous housing acts mainly in two respects. The first is that it places upon every local authority the obligation of considering the working class housing in its neighbourhood and making a report to the Local Government Board within three months; the second is the extended powers given to the Board itself.

Its housing legislation has not reflected much honour on the House of Commons. The Housing of the Working Classes Act (1890), of which the new bill is in form an amendment, was passed to consolidate some seventeen statutes all enacted with the object of providing and improving the dwellings of the working and artisan classes. That consolidating act had to be explained by another act in 1894, and new acts followed in 1900, 1903, and 1909, so that the law has again become involved in much the same tangle as brought about the passing of the consolidating act of 1890. The new bill is defined as being "a bill to amend the enactments relating to the housing of the working classes, town planning, and the acquisition of small dwellings," and the Housing of the Working Classes Act (1890) is referred to as the principal act.

A spirited endeavour is made in the new bill to avoid or remedy errors committed in previous housing legislation, and in particular not only to abolish slums, but to prevent "new slums being built on the old site." The bill, as has been said, requires a local authority to make a survey of its area and to submit to the Local Government Board within three months of the bill becoming law a scheme for the provision of houses for the working classes and fresh schemes when occasion arises. If the Board approves a scheme the local authority must carry it out within a specified time; if the Board considers a scheme inadequate, it may either approve it as an instalment or send it back and require a new scheme to be submitted within a stated time. If a local authority fails to prepare an adequate scheme or to carry it out after it has been approved, or if for any other reason it appears to the Local Government Board desirable, it may, after hearing the local authority, transfer the preparation and carrying out of a scheme to the county council. Power is given for local authorities to produce joint schemes, as will be necessary in some districts; in the London district, for instance, where a large number of authorities are concerned, the county council will have power to build outside London. If the local authority or the county council, or the joint authorities under a joint scheme, fail to fulfil their obligations, the Local Government Board may, after hearing the authorities or councils, itself prepare and carry out a scheme, and will have all the powers of a local authority under the Housing Acts.

The provisions in the bill for encouraging the erection of houses by public utility societies and housing trusts may prove to be of great importance, especially in connexion with the powers to be given to the Local Government Board. A public utility society is defined as "a society registered under the Industrial and Provident Societies Act (1893), the rules whereof prohibit the payment of any interest or dividend at a rate exceeding 6 per cent. per annum." One of the objects of such a society must be the provision of houses for the working classes. Already a number of public utility societies are in existence, but the conditions produced by the war have hindered their activities. A society must comply with regulations to be made by the Local Government Board; and these regulations, it is expected, will be drafted on the lines recommended by the Hobhouse Committee. Under it all tenants would be entitled to become shareholders, and to elect annually a tenant members committee, which would appoint at least one-fourth of the board of management. A society may either raise the whole of its capital itself or may obtain a State loan repayable in fifty years, up to a maximum of three-quarters of the total cost of the housing scheme. Further, a subsidy will be granted, whether the money be borrowed from the State or raised privately, of an amount equal to 40 per cent. of the charges for interest and repayment of the three-quarters of the total capital. A housing trust is defined as a co-operation which by its constitution "is required to devote the whole of its funds, including any surplus, to the provision of houses for persons the majority of whom are in fact members of the working class." A local authority in preparing, and the Local Government Board in approving, schemes must have regard to any proposals by such bodies, and, moreover, a local authority or county council may make grants or loans to a public utility society, or subscribe to its capital, or guarantee interest on money borrowed by the society, or lease to it acquired land.

The fifth clause of the bill deals with the slum question. It authorizes the Local Government Board, on being satisfied that the area ought to be dealt with by the local authority under Part 1 or Part 2 of the principal Act, to require the authority to make a suitable scheme, and if the local authority fails to obey, the Board may authorize the county council to make and carry out the scheme or itself carry it out. Dr. Addison, in an explanatory statement, says that where a closing order cannot be made in respect of slum property because there are no other houses for the occupants to live in, a local authority will have power to acquire houses and alter and improve them to make them suitable. Justifying this he said, though no one was fond of slum patching, at the same time there are thousands of houses in London which could be made quite habitable by suitable alterations and adjustments. A house might be acquired and turned into flats, and thus, with much less use of building material and in a much shorter time, provide a greatly increased amount of accommodation of a decent kind. Advances or loans may be made for the purchase of houses which can be made suitable for the working classes as well as for the purchase and development of land.

The financial provisions have been drawn with the expectation that they will prevent the use of an acquired site for putting up another slum. The value to be paid is to be the value of the site, cleared of buildings and available for development, in accordance with the building by-laws for the time being in force in the district.

The scarcity of building material is an important limiting factor. It will not be possible to find either the material or the work for all the schemes which will be on foot within the next twelve months. Dr. Addison stated that 400 applications had already been received from local authorities for sites which would

provide 80,000 or 90,000 houses, and 90 of the authorities had already submitted plans for the houses themselves. The bill contains proposals designed to enable tenants to purchase houses provided by a local authority on the system of weekly payments.

The position with regard to small houses for the middle class is not clear; such houses are very much wanted. Dr. Addison indeed said that the need was as urgent as for working-class houses, and that the Government intended to try to meet the want; but it is not clear from the bill how this is to be done, and there would seem to be some difference of opinion about it in the Local Government Board.

EXPENSIVE EXPERIMENTS ON TUBERCULOSIS.

THE discussion on administrative problems relating to tuberculosis which took place at a special meeting of the Faculty of Insurance last month yielded some useful information and gave opportunity for expressions of present opinion by some well known experts. The fact is now fully recognized that neither sickness benefit nor sanatorium treatment, as applied hitherto, has any real effect upon the incidence and spread of tuberculosis in general. Hence some people are disposed to regard the expenditure of half a million as wasted money; but, from another point of view, it may be that a substantial return has been forthcoming in the shape of practical experience and guidance for future action. The value of all new forms of treatment of chronic disease is apt to be exaggerated when they are first introduced. The use of tuberculin and of open-air treatment, methods good in themselves, were brought into disrepute by over-statement and indiscriminate application. In like manner sanatorium treatment is now spoken of as a failure because it has not checked the general progress of the disease and has only afforded temporary relief in cases in which cure had been expected, if not actually promised.

The experience gained by these so-called failures has, however, paved the way to a new line of practice which, if it can be economically carried out, bids fair to yield better results for the community as well as to the individual patient. The establishment of farm colonies where consumptive persons can not only be treated on approved hygienic lines, but can be enabled to earn sufficient wages to maintain themselves and their families, as soon as their health is sufficiently restored to permit of work suitable for each case, has now been proved to be possible. As things are now, the well-to-do patient stands a far better chance of permanent recovery than the man who must work for his living. The latter, if he does so work, loses his insurance money, and must needs return to the very conditions under which his disease was developed. Insurance, as at present established, takes no heed of the essential difference between acute and chronic disease, and expert opinion is rapidly coming to the conclusion that special legislation must be undertaken to meet the peculiar conditions of tuberculosis, with its frequent fluctuations of activity and quiescence.

It is a significant fact that women, as a rule, derive more benefit than men from sanatorium treatment. One reason for this can be traced to the very general habit among women of using their hands in knitting or other such work when not occupied with domestic affairs. Too many men lose heart in the sanatoriums from sheer lack of interest and occupation. Many of them, even with advanced disease, are quite capable of undertaking light work if it can be done under truly hygienic conditions, and not in a crowded and perhaps ill-ventilated factory. With the assistance of Parliament it might be possible to carry out on a large scale such a system as has now been shown to work so well at Papworth, in Cambridgeshire, under the superintendence of Dr. Varrier-Jones. Provision is there made for patients in all stages of the disease. Advanced cases are segregated, but permitted to occupy themselves whenever possible, and many of them are soon able to be classified as medium cases and become able to undertake suitable work, for which they earn remunerative wages. With the establishment of village colonies they will be able to start home life again. The early case may be so completely arrested as to warrant a return to former life, but all thus receive treatment unattended by financial anxieties.

The appalling numbers to be dealt with would seem at first to render such an idea altogether Utopian, but we have learnt during the last few years that gigantic schemes can be carried to success if the need for them is properly recognized. The present need of a comprehensive method for dealing with consumption is only too apparent to all who will take the trouble to look the facts in the face. It is to be feared that even in the House of Commons itself there is a tendency to look the other way when legislation on a large scale is suggested for the solution of the problem, and it is reported that the representatives of labour, who should be chiefly interested in schemes which concern the well-being of the working classes, have invariably absented themselves when tuberculosis has been under discussion. The presence of a larger number of medical members in the new House will, we have no doubt, ensure a hearing for the scientific side of the question, which is well set out in a memorandum [1] on the share of colonies in the treatment of tuberculosis, by Dr. J. E. Chapman, medical inspector of the Local Government Board, recently issued by that Board.

The problem is many-sided, and has to be examined from the social, economic, and psychological aspects as well as from the medical side. While the Papworth experiment has proved the possibility of solving a part of it, an ideal scheme must be the work of years, and there is danger of miscarriage from over-zeal or too great hurry. To attempt to deal with it summarily or by placing it under bureaucratic management will inevitably lead to failure; but by slow progress on the lines already indicated, and by taking advantage of experience as it is acquired, there is reasonable prospect that in time the disease may be materially decreased if not suppressed.

ORGANIZATION OF THE MINISTRY OF HEALTH.

WE have received the following notification: "In view of the impending retirement of Sir Horace Monro, K.C.B., Permanent Secretary to the Local Government Board, and in order to facilitate the unification of the departments which will be brought together in the Ministry of Health on the passage of the bill now before Parliament, the President of the Local Government Board has appointed Sir Robert Morant, K.C.B., Chairman of the National Health Insurance Commission, and Mr. John Anderson, C.B., Secretary to that Commission and at present acting as Secretary to the Ministry of Shipping, to be additional secretaries to the Local Government Board, with special functions and responsibilities in relation to the organization of the new department, continuing their insurance functions. Sir Robert Morant and Mr. Anderson have been designated as First and Second Secretary respectively in the new Ministry." In this new office Sir Robert Morant will have a wide scope for his great

[1] H.M. Stationery Office. 2s. net

organizing abilities. His appointment is a good omen for the future of the Ministry of Health. It may be recalled that when Sir George Newman was appointed to be Principal Medical Officer to the Local Government Board, rather more than a month ago, it was announced that he would have the status of a Secretary of the Board, and would have administrative responsibilities in respect of the work of his department.

THE PHYSIOLOGY OF A WORKING DAY.

GRADUAL reduction of the hours of labour from ten or nine to eight, and now to seven or six, must have made many people wonder whether some scientific basis might not be found for the hours which should be worked in various trades. Major A. C. Farquharson raised the matter in the discussion on the second reading of the Ministry of Health Bill. Speaking as one who had spent the greater part of his professional life in the service of the miner, he expressed his astonishment that members of the House of Commons should be so ready to put forward the idea that the number of hours a man should work day by day was to be settled by the arbitrary capricious decision of the mass. He contended that it was a scientific problem, and suggested that if science could establish that a normal man could work up to a given standard without detriment to his physical condition and without injury to his health or chance of longevity, the number of hours of a working day could be standardized. In the discussion on the bill in committee he contended that there ought to be a scientific department, working in relation with the Ministry of Health, to decide various matters of a physiological nature in relation to capital and labour, including suitable hours of work. We may point out that a large amount of scientific work had been done in this direction, some of which is summarized in the reports of the Health of Munition Workers Committee, but the subject is complex and physiology is far from having found a complete solution. It is comparatively easy to estimate the amount of energy given out in various kinds of work at various paces, but muscle fatigue is only one and probably the least important element in fatigue. There is in addition the mental element, which cannot be measured, and the nervous element, which it will be possible to measure with difficulty if at all. Nervous fatigue occurs in the initiating and distributing nervous mechanisms of the brain and spinal cord, which are more quickly fatigued than the contracting muscles; consequently in the animal body the impulses to activity, springing from the brain, cannot bring the muscles far towards complete fatigue before their sources are themselves fatigued and impotent. Though a tired man may refer his tiredness to the muscles, in reality the most severe bodily activity does not produce any close approach to complete fatigue of the muscles. The fatigue is of the nervous system, though its effects may be referred to the muscles. The conclusion of the committee was that the problems of industrial fatigue were primarily, and probably almost wholly, problems of fatigue in the nervous system and of its direct and indirect effects. Another complicating matter is that the human body seems to be adapted to withstand short spells of severe labour, broken by longer spells of rest; the point is illustrated by the story of a wager between two officers at the front as to the time to be taken in making equal lengths of a trench, each with an equal squad of men. One officer let his men work as they pleased, but as hard as possible. The other divided his men into three sets, to work in rotation, each set digging their hardest for five minutes and then resting for ten. This second team won easily. Another conclusion—this time in a report by Dr. H. M. Vernon to the same committee—was that the hours of labour ought to be varied between wide limits according to the character of the work performed. This seems the most promising line of inquiry.

MEDICAL BLIND ALLEYS.

A CORRESPONDENT raises the question whether the multiplication of whole-time subordinate medical appointments, which is one of the tendencies of the day, is to the advantage either of medicine or of individual practitioners. The matter ought not to be considered merely from the point of view of administrative convenience. It concerns not only the medical officer of health or the chief tuberculosis officer, nor even the subordinate officers appointed, but also the medical profession generally, since each appointment withdraws from general practice, and indeed from all independent practice, certain classes of disease or of patients. It also concerns the public, since it is to its advantage that the general practitioner should have as large a field of observation as possible. Our correspondent, who writes from a large industrial town with more than one hundred thousand inhabitants, where there is at present only one general practitioner working under the corporation, states that the medical officer of health—who, he says, is strongly opposed to part-time medical officers—has carried the Public Health Committee with him, and very soon the corporation will advertise for two assistant medical officers to assist in the treatment of children at the school clinic, and at a maternity hospital for serious cases, and at a baby clinic shortly to be opened. In addition to the medical officer of health and his chief assistant there will be two assistant medical officers, receiving salaries of £550 and £450 a year respectively. "The seemingly large salary, with regular hours, is," the writer says, "a strong temptation to young men, especially those who married soon after qualifying, and joined the R.A.M.C. for the war. But what prospect is there of the three assistants in this town ever becoming medical officers of health; and how much higher will their salaries rise? How many tuberculosis officers and assistant school officers can become superintendents and consultants? I know that the Local Government Board and many municipal authorities prefer full-time men, and there is much to be said in favour of such appointments, but do the men themselves realize the end towards which they are travelling—that for most of them this work is really a blind alley?" We entirely agree with our correspondent, and the position of assistant medical officers of asylums, to which attention has recently been drawn in our correspondence columns, is an object lesson of what is likely to happen with the school service and the tuberculosis service. They are not graded services, the appointments are made by local authorities, and promotion to the higher posts must be very much a matter of luck, or dependent on other qualities which Lieut.-Colonel Henry Smith and Dr. Mercier have recently described in pungent phraseology we will not attempt to imitate.

THE CENTENARY OF AUSCULTATION.

IN 1819 appeared Laënnec's *Traité de l'auscultation médiate*, a work which is one of the landmarks in the advance of medical science. The inventor of the stethoscope, whose full Christian name was René Théophile Hyacinthe, was born in 1781, at Quimper, in Brittany. Like Bichat, Dupuytren, Récamier, and other men who rose to distinction in the early part of the nineteenth century, he had to serve as a regimental surgeon in the Republican armies while he was still a student. In 1816 he was consulted by a buxom young woman with a diseased heart. Unwilling to employ immediate auscultation, Laënnec rolled a quire of paper into a cylinder, and applying one end of this to the cardiac region and the other to his ear was surprised to find that he was able to hear the sounds of the heart more clearly than he had ever heard them before. He followed up this observation, and by the use of the new method discovered a number of previously unknown signs of chest disease. In 1818 he communicated the results of his work to the Académie des Sciences, which listened to the announcement of his epoch-

making discovery "with respect but without enthusiasm." His book was received with distrust, and the stethoscope was ridiculed as a toy. C. J. B. Williams, the chief of the early expounders of Laënnec's method in England, says that but for the admirable description of diseases contained in the *Traité de l'auscultation médiate* the discovery would have been allowed to fall into oblivion. In 1823 Laënnec was appointed professor of internal medicine in the Paris faculty, and he was physician to the Charité, to which students flocked from all parts of Europe. At the bedside he always spoke in Latin for the benefit of his foreign hearers. He was a man of frail physique, and his private practice never exceeded £1,000 a year; though he was physician to the Duchesse de Berri he was not popular in court circles, in which he was spoken of as *ce petit sec*. In his own profession he found severe critics. Antoine Portal, one of the leading physicians of his day, who differed from him as to the case of Madame de Staël in her last illness, has left a bitter judgement of his method of treatment and his discovery. Laënnec died in 1826, of the disease which he did so much to elucidate, as has often been the fate of physicians.

THE CHEPSTOW WHITE ELEPHANT.

THE story of the National Shipbuilding Yard at Chepstow has given food for much local gossip, has stimulated some ironic letters to the newspapers on the general text that truth is stranger than fiction, and has inspired at least one poet, who has sung "Nobody minded, the public paid." The plan for a yard to build standard ships was originally made by a company; it was afterwards taken over by the Government, and has now, we understand, finally been abandoned. Authorities at Chepstow have been shifting, and we are not at the moment prepared to specify which it was that prudently decided to erect a hospital for the many thousands of workmen contemplated in the grandiose scheme originally formed. A hospital for 100 beds was built at, it is said, a cost of £100,000. It covers a great deal of ground, and has, it is alleged, been planted in the middle of a plot of 200 acres which the company, before the Government superseded it, had set aside for a garden city. That may be an invention of the enemy, but the site, being on a hill with a very awkward approach, was not well chosen for a hospital. The hospital buildings are finished, though a few weeks ago a certain amount of work was still being done on them, and the grounds were being tidied; it has not, we believe, been equipped. The hospital is not wanted at Chepstow, a small town with a dwindling population of under 3,000 before the war. The buildings have, it is stated, been offered to the Monmouthshire County Council as an isolation hospital or an institution for mental defectives. For either purpose it may serve; but we understand that the Pensions Ministry is now contemplating taking it over as a hospital for discharged pensioners, to serve the whole of South Wales. This aspect of the matter is one in which the medical profession is bound to take an interest. We have made inquiries in South Wales about this "unwanted hospital," and find that the project of treating pensioners from South Wales and Monmouthshire at this place has not received the local support and backing from representative bodies which such a scheme must have in order to make it a success. We understand also that medical opinion is not in favour of the plan. Chepstow is a border town, a land's end of the area which it is suggested it might serve; it is not easily accessible from the populous areas of Monmouthshire and South Wales from which soldiers who will require treatment as pensioners were recruited. To reach the hospital long and tiresome journeys, which out-patients certainly ought not to be expected to take, will be necessary. It is unsuitable even as a temporary expedient. The Pensions Ministry would do well to face the difficulty, and at once set to work to make up for the year that has been lost in hesitations. We have referred so far only to the inconvenience and loss of time caused to pensioners, but the inaccessibility of Chepstow involves another drawback. The men are patients who will go to the hospital for treatment and deserve the best the country can provide. The site of the hospital may be picturesque but it is in an out-of-the-way corner, and it is difficult to see how an efficient medical and surgical staff can be made readily available for every condition and all emergencies. The war is over, medical demobilization is going on apace, and it will not be easy to obtain a suitable staff at Chepstow except by methods which will necessarily be very expensive to the Pensions Ministry. We are informed also that quite recently a scheme has been entertained for the establishment of a special surgical centre for the orthopaedic treatment of pensioners at this Chepstow hospital. This new scheme would supersede the original plan approved during the period of hostilities for the establishment of such a centre at Cardiff. After the approval of this original scheme an estate was bought in the immediate vicinity of Cardiff for this specific purpose, and it seems strange that the local voluntary enterprise should be thrown over for this new plan at Chepstow, which we suspect would never have been thought of as a suitable place but for the fact that a hospital is going begging. Cardiff, the seat of the Welsh Medical School, is the largest centre in Wales for specialists in all branches of medical and surgical knowledge, and it is difficult to find any valid reason why the Cardiff scheme should be mutilated or abandoned for this unwanted hospital at Chepstow.

THE BIRTH-RATE.

THE fact that in the last quarter of 1918 the civilian deaths in England and Wales exceeded the births by 79,443 will no doubt stimulate public interest in the proceedings of the National Birth-rate Commission. Sir Rider Haggard, who was the first witness on March 24th, while obviously sceptical as to the feasibility of schemes—much favoured by the wealthier class of urban residents—to people the rural districts of this country with demobilized soldiers rearing large and healthy families on the produce of small holdings, thought that much might be done to maintain the supply of infants by encouraging emigration. Dr. C. Killick Millard, who followed Sir Rider Haggard, contested the view that a man ought to be accused of failing in his duty if he declined to have children merely for the sake of emigrating them to the antipodes. Dr. Millard came forward as a whole-hearted supporter of birth control. In his opinion, the success of the League of Nations would deprive the advocates of unlimited procreation of their most effective argument—the need for large supplies of cannon fodder. Apart from the military argument, the chief objection to birth control as at present practised was, he considered, its dysgenic effect, the C 3 classes adding to the population in a larger proportion than the A 1 group. Were all classes equally to practise birth control the limitation would cease to operate selectively; indeed, it might be possible to improve the race by a suitable propaganda tending to the accentuation of birth control amongst tainted stocks. We shall no doubt be accused of frivolity when we say that the proceedings of the Birth-rate Commission, the discussions of the bishops at the Pan-Anglican Conference, and most of the literature dealing with the subject recall to us the combat between the lion and the unicorn for the crown which, as the White King explained to Alice, was *his* crown. There is not, we conceive, the slightest reason to expect that the provision of small holdings in England or cheap passages to Canada, the pronouncements of bishops, or even the aphorisms of eminent physicians, will affect the birth-rate in the second place of decimals. Whether the decline of the birth-rate is the unmixed blessing which members of the Malthusian League deem it or the unmixed evil which various divines assert it to be, or

whether, as Dr. Millard holds, it is only an evil in so far as it is dysgenically selective, it will not be arrested until an equilibrium has been established between the available income per head and the standard of life demanded by each social class.

A MEDICAL RESEARCH CONSPECTUS.

SINCE the end of hostilities the Medical Research Committee has had under consideration the question of continuing in another form the compilation of abstracts and reviews of foreign publications in medical science which, with a view to special war conditions, have hitherto been issued in the *Medical Supplement* to the Daily Review of the Foreign Press. The *Medical Supplement* as such will be discontinued after the April number, but representations have been made to the committee from many quarters, urging the continuation upon a permanent basis of a summary of a similar kind. It appears to have been found in many directions that the *Supplement* has served a useful purpose in aiding both the progress of research and its application to practical problems. The Medical Research Committee has made arrangements accordingly to publish in monthly issues periodical collections of abstracts and reviews of work done in the medical sciences and recorded either in British and American publications or in those of other countries. It is intended to leave a short interval between the cessation of the *Supplement* and the beginning of the new periodical, and it is hoped that the first number will appear on October 1st next, at the beginning of the academical year. Its size will be a large octavo, uniform with that, for instance, of the *Quarterly Journal of Medicine* and of an increasing number of other scientific journals. The contents will be in the form of abstracts of individual papers, with occasional critical summaries of grouped results, taken from published work making advance in particular branches of medical science. A detailed prospectus will shortly be prepared, and will be sent upon application made to the Medical Research Committee, 15, Buckingham Street, Strand, W.C.2.

BUTTER FOR INVALIDS.

SINCE March 1st this year, margarine has been obtainable in any quantities and from any retailer; consequently extra rations of fat for invalids have not been required as from that date, except in cases where margarine is shown to be unsuitable. The Ministry of Food has been advised that cases in which butter is required by invalids in lieu of margarine are extremely rare. Owing to the shortage of butter which still exists in the country, it is not yet possible to raise the ordinary ration above the limit of 1 oz. weekly. In these circumstances permits for extra butter on medical grounds can only be granted in very exceptional cases, and such permits are being limited to cases in which the doctor certifies that the applicant cannot digest margarine. It is recognized by the Ministry that this regulation will exclude many cases in which doctors may think that an allowance of butter, whilst not strictly necessary, would benefit the applicant; also that the filling in of these particulars in the medical certificate imposes a further burden on medical men, some of whom find it very difficult to spare the time. But we are assured that the present position in regard to butter makes it essential that the regulations should remain in force until supplies became more plentiful.

LIEUT.-GENERAL SIR C. H. BURTCHAELL, K.C.B., Director-General Medical Services, France, has been appointed Director of Medical Services, India, in succession to Lieut.-General Sir T. J. O'Donnell, K.C.I.E., who has vacated that appointment, which he has held since 1916. Surgeon-General W. R. Edwards, C.B., I.M.S., is Director-General of the Indian Medical Service. The University of Dublin, at which he graduated in 1889, recently conferred upon Sir Charles Burtchaell the honorary degree of LL.D. At the conclusion of the ceremony the students of the university drew his carriage to the Provost's house, where he and Lady Burtchaell were entertained at luncheon. In the afternoon Sir Charles Burtchaell gave a stirring address to the students of the School of Physic.

THE week ending March 22nd saw a further decline in the number of deaths attributed to influenza. The total for the great towns was 1,358 (2,305 in the previous week) and for London 230 (435 in the previous week). The only great town returning more than 100 deaths was Birmingham, with 107 (50 less than in the previous week). In Oldham, which was one of the two towns reporting an increase in the week ending March 15th, the deaths declined from 33 to 13.

Medical Notes in Parliament.

Ministry of Health Bill.

STANDING COMMITTEE.

THE third sitting of the Standing Committee was held on March 20th under the chairmanship of Sir Archibald Williamson.

CLAUSE 3. TRANSFER OF POWERS (*continued*).

The Projected Transfer of Poor Law Functions.

At the previous sitting Captain Barnett had moved to omit the declaratory paragraph in subsection 3 of Clause 3, as follows:

> It shall be lawful for His Majesty from time to time by Order in Council to transfer from the Minister to any other Government department any of the powers and duties of the Minister relating to the matters specified in the First Schedule to this Act, and any other powers and duties of the Minister which appear to His Majesty not to relate to matters affecting or incidental to the health of the people.

Captain Barnett and Sir Samuel Hoare argued that the paragraph was platitudinous. Dr. Addison said that both trade unions and friendly societies were anxious to have a declaration of policy in the bill. He promised that before the report stage he would confer with those who assisted him in framing the clause; and on that assurance the amendment was withdrawn.

Orders in Council.

In a brief general discussion on the adoption of Clause 3 Sir Courtnay Warner expressed the opinion that the Minister should devise other methods of carrying out certain provisions of the bill than by Orders in Council. Sir Ryland Adkins suggested that an Order in Council should be laid in draft before each House, and not submitted to His Majesty until a resolution approving it or modifying it had been passed. Dr. Addison thought the suggestion useful, and that it might be considered on the report stage. The clause was passed.

CLAUSE 4. CONSULTATIVE COUNCILS.

On Clause 4, which sets forth that "It shall be lawful for His Majesty by Order in Council to establish consultative councils" to give advice and assistance as might be determined by the provisions of the Order, Sir Watson Cheyne moved to substitute the words "It shall be the duty of the Minister to set up advisory councils." His point was that these councils should be an integral part of the bill; the appointment should not be subject to the passing whim or fancy of a Minister. They all trusted Dr. Addison, but they did not know who might succeed him. For the same reason Sir Watson submitted that the word "advisory" was preferable to "consultative" in defining the councils. Sir Philip Magnus, in supporting the amendment, said that as the clause stood the appointment of councils was permissive, not obligatory. Unless the Minister was well advised by members of the medical profession the work would not be as satisfactory as it could be made. Sir Alfred Warren said that the advisory committees under the National Insurance Commissioners were of little use. The members did not know what happened to their recommendations. Would the Minister of Health pay due regard to the representations to be made under this proposal?

Major Astor said that the form "It shall be lawful" was used because if an Order in Council was to be made by His Majesty and submitted to Parliament, it would not be in

accordance with tradition to say regarding contemplated action by His Majesty more than "It shall be lawful." If the form suggested by Sir Watson Cheyne were adopted the matter would rest with the Minister without it being brought before Parliament. A third course possible was for the bill to define the orders to be made, but that would be most undesirable, as it would give no flexibility. He thought there was not much difference between the words "consultative" and "advisory." After all, the responsibility was with the Minister. Major Astor therefore asked the Committee not to do anything to weaken the responsibility of the Minister to Parliament.

On a question by Sir Courtney Warner as to the strength of the councils, Dr. Addison said that if he set them up in any form he liked, it would mean that he was subject to parliamentary criticism, and that was desirable. In framing the Housing Bill he had found great advantage from the advice of trained experts. The draft order proposed that the councils should consist of not more than twenty members. He already had in mind to constitute four committees—local government, medical, insurance, and one to represent the general public. Under Clause 6 power would be taken to pay travelling expenses and out-of-pocket expenses. The Minister would not be bound by the recommendations, but would be responsible to Parliament. Already there were such bodies advising the Board of Education, the Board of Trade, the labour exchanges, and the Insurance Commissioners. As for the terms "advisory" and "consultative," the term "consultative" had been used as more generally acceptable.

Sir Watson Cheyne accepted the explanations as satisfactory and withdrew his amendment.

A Women's General Consultative Council.

Sir Samuel Hoare moved that one of the councils should be called the Women's General Consultative Council, and should consist entirely of women. He referred to a communication he had received that afternoon from an organization, presided over by Lady Rhondda, representing 500,000 women in favour of this proposal.

Dr. Addison asked that the motion should not be pressed, as it would lead to demands for other special councils, and then his hands might be tied. It would in any case be necessary to appoint some of the councils or committees mostly of women, and it might be found that one or two was composed entirely of women.

The amendment was defeated by 22 votes to 14.

At the meeting of the Committee on March 25th, on the resumed consideration of Clause 4, Sir Watson Cheyne improved the English of the text by getting the phrase "every council shall consist of persons of both sexes" changed to "consist of men and women." Mr. Griffith wanted to have it stated that "a substantial number" of the members of the councils and committees should be women; but Dr. Addison said that while he would be the last to object to the inclusion of women, some of these councils would deal with highly technical questions as to which women would not have the special knowledge requisite. The amendment was withdrawn.

Reports of Consultative Councils.

Mr. Godfrey Locker-Lampson proposed that the reports of the consultative councils should be published within two months of their presentation to the Ministry except in those cases in which a recommendation was made to the contrary. If the work of the councils was to be paid for out of public money, Parliament had a right to know what they were doing. Major Astor advised that the motion should not be pressed. The effect of publishing reports would be that certain points of a confidential character would be held back from reference, or indeed, some investigations might be stopped. The amendment was withdrawn.

CLAUSE 5. PROVISIONS AS TO WALES.

The provisions as to Wales were next considered, and Dr. Addison proposed the following new clause:

The Minister shall, subject to the provisions of this Act, appoint such officers as he may think fit to constitute a Board of Health in Wales, through whom he may exercise and perform in Wales in such manner as he may think fit any of his powers and duties; the Board and any officer who is a member thereof shall act under the directions, and comply with the instructions, of the Minister.

Dr. Addison explained that in effect it would in any case be necessary to have some separate organization for Wales—as, for instance, for housing schemes—but these organizations would be under the direction of the Minister of Health. In those circumstances he thought it desirable that a Board of Health should be constituted in Wales, but it was necessary to safeguard the Minister with the power to communicate direct with officers, and so avoid the delay of consultations with the Board as to various matters.

The new clause was agreed to.

CLAUSE 6. STAFF AND REMUNERATION.

On Clause 6, which provides for the appointment of the Minister (at a salary of £5,000 a year) and staff (at such salaries and remuneration as the Treasury may determine), Mr. George Thorne proposed that one at least of the assistant secretaries should be a woman, but after a short discussion he withdrew this in favour of a broader amendment to set forth that in the making of staff appointments no discrimination should be made by reason of sex between men and women.

Major Astor said the amendment was unnecessary, and Dr. Addison asked that it should not be pressed, and that the committee should accept his assurance that women would be given office on their merits. He mentioned that he had just appointed Dr. Janet Campbell to a position at the Local Government Board. In doing so he had in mind the services she would be able to render in the Ministry of Health; and he had, in fact, "exercised discrimination" in favour of a woman for the reason stated. He asked to be allowed free discretion.

In the discussion several members held that the amendment would not tie the hands of Dr. Addison, and Dr. Murray introduced a touch of humour by suggesting that Dr. Addison should accept the amendment, as, in changing political conditions, it would tend to protect men in securing for them a share of offices on the score of "no discrimination."

There was a short discussion on the subsection of this clause as to the expenses of the Ministry. In the end a proposal by Major Astor was accepted to the effect that members of the consultative councils and committees should be paid travelling expenses, subsistence expenses, and reasonable compensation for loss of remunerative time.

CLAUSE 7. PARLIAMENTARY SECRETARIES.

On the motion of Dr. Addison, words were added at the end of Clause 7 providing that two secretaries of the Ministry might sit in the House of Commons at the same time.

CLAUSE 8. ORDERS IN COUNCIL.

It will be recalled that at an earlier stage Sir Ryland Adkins obtained from Dr. Addison a promise to see whether the procedure under Orders in Council could not be made more directly subject to parliamentary control than was proposed in the bill. Dr. Addison now proposed that, in addition to the condition that each Order should be laid in draft on the table of each House of Parliament, Orders relating to specific powers and duties mentioned in subsections 2 and 3 of Clause 3 should not take effect until both Houses of Parliament had adopted them by resolution; the other Orders, which would concern administrative matters, would in the ordinary way lie on the table—in draft—for thirty days, and then be submitted to His Majesty unless questions were raised.

CLAUSE 9. THE SCOTTISH BILL.

On the motion of Dr. Addison, Clause 9, applying the bill to Scotland, was withdrawn, as a separate measure is being introduced for Scotland.

CLAUSES 10 AND 11. TRANSFER OF POWERS.

Clauses 10 and 11, providing for consequential modifications of the Insurance Acts and dealing with title and definitions, were passed with small amendments.

Mr. Locker-Lampson raised the question of a time limit for the transfer of the powers to be taken over by the Minister under subsection 1 of Clause 3—that is, the powers immediately transferable. He suggested that the time limit should be a year. Dr. Addison was willing to accept a provision of the kind, but wished the period to be "within one year from the passing of the Act" as being more convenient for financial and other reasons. Words to this effect were inserted. A subsection was also added that the provisions for Wales should apply to Monmouthshire.

APPLICATION TO IRELAND.

The Attorney-General for Ireland (Mr. A. W. Samuels, K.C.) proposed a new clause to apply the bill, with modifications, to Ireland.

Mr. Devlin urged that before action was taken for Ireland there should be a conference of public health bodies in Ireland, and a health measure should be evolved to meet the needs of the people. He objected to the

inclusion of Ireland in a health measure which was really designed for England and Wales as evident from the fact that the people of Scotland would have nothing to do with it.

The amendment of Sir William Whitla for an Irish Board of Health had not been reached when the Committee adjourned until March 27th.

MEDICAL TREATMENT OF CHILDREN (IRELAND).

The Attorney-General for Ireland (Mr. A. W. Samuels) moved the second reading, on March 24th, of a bill to extend to Ireland the English system by enabling local authorities to have medical inspection of children in elementary schools. The councils of the counties and the county boroughs are to be the local authorities for the purposes of the measure. The Treasury will provide an amount not exceeding one-half the expenses that may be incurred by the local authority in setting this relief in operation and carrying it into effect. In the course of the debate several members regretted that the provisions of the bill were weaker than those of the English Act. Under the last named the duty is imposed on the local medical authority to provide medical inspection; under the Irish bill the matter is permissive. Mr. McGuffin said that the conditions of the schools in Ireland were deplorable; in many instances the ailments of the children were contracted there. The situation in Belfast was very bad for a city that aspired to any kind of civilization. Sir Maurice Dockrell read a short report sent to him by the medical officer in Dublin to the effect that inspection of school children in Dublin was absolutely essential in the interests of the public health. Mr. Devlin asked why the proposals of the bill were not incorporated in the new health proposals for Ireland. Sir Edward Carson added his protest against the bill being permissive, and Viscount Duncannon spoke to the same effect. Mr. Samuels, in reply, said that if the bill was to be mandatory it would be necessary to set up in each county a new medical authority, and it would be necessary to consider whether the county councils, many of which were moribund, were the proper bodies to make the appointments for the new medical authority. Under another bill introduced later on the same day new county councils are to be set up and would take up these matters. Hence the Children's Bill was kept on permissive lines. The question, however, could be further considered in Committee, as also the subsection which, taken up from the Act of 1909, left it to the parent to decide whether the child should be submitted to inspection or treatment. The bill was read a second time.

Notification of Venereal Diseases.—Major Astor, in reply to Major Courthope, said, on March 24th, that the President of the Local Government Board, as at present advised, was not prepared to propose regulations for the notification of persons suffering from venereal diseases. A question of law raised by Major Courthope—namely, whether the President of the Local Government Board had statutory power to schedule venereal diseases as notifiable, was at present under examination. In reply to Mr. Stewart, the War Secretary said that it was the practice to retain in hospitals soldiers suffering from venereal disease at least as long as they were in an infective condition. Major Courthope asked whether, on March 4th, the Registrar of Cherry Hinton Military Hospital reported to a local medical officer that on the previous day a soldier had been discharged from hospital at his own request suffering from venereal disease and in an infectious condition; and whether, under the existing regulations, the officers in charge of a military hospital were unable to retain a venereal patient who was due for demobilization to complete treatment; and whether, in the interests of public health, he would prohibit the release of men so suffering. Mr. Churchill replied that inquiry was being made, and he would communicate as soon as possible.

Cerebro-spinal Meningitis at Cambridge.—Dr. Macnamara, in reply to Sir Clement Kinloch-Cooke on March 24th, said it had not been possible to trace the "carrier" supposed to be responsible for the outbreak of cerebro-spinal meningitis at Cambridge. The last case was reported on March 7th.

Sanatorium Treatment for Soldiers.—Sir Worthington Evans stated, on March 20th, in reply to Sir Kingsley Wood, that a disabled soldier under treatment in a sanatorium, or other institution for an attributable disability, received an allowance at the maximum rate of pension, from which a deduction of 7s. was made; not for the cost of treatment, but for maintenance. The bonus of 20 per cent. was not added to the man's pension, because the deduction made for maintenance was so small as largely to relieve the man of the high cost of living which the bonus was designed to meet. Under Article 4 of the Royal Warrant a disabled man might be subject to the condition that he should undergo medical treatment in an institution or otherwise where it was certified that such treatment was necessary to his interests. Statistics of refusal had been kept since July of last year. During the eight months between July 1st, 1918, and February 28th of the present year, 1,477 cases of refusal of treatment for tuberculosis had been brought under the notice of the department, and of these 71 were under consideration. Of the 1,406 refusals dealt with, it had been necessary to impose the penalty only in 99 cases.

The Retired Pay of Discharged and Disabled Soldiers.—Asked by Major John Edwards whether the recommendations of medical boards were invariably carried out in the granting of pensions and deferred pay to discharged and disabled soldiers, Sir L. Worthington Evans said, on March 20th, that he could not admit that medical boards were the only qualified authorities to survey the disabilities of officers and men. It was found by experience that medical boards differed very greatly in their views and assessments, and in fairness to the disabled it was desirable that the reports of the boards should be carefully reviewed by well qualified medical men at the Ministry of Pensions in order to maintain a proper common standard of award.

Hospital Accommodation at Ports.—Major Astor, replying to Mr. Leslie Scott on March 20th, said that he was aware of the request of the Port Sanitary and Hospitals Committee of the Liverpool Town Council to the War Office that the Fazakerley Fever Hospital, which had been in military occupation since the beginning of the war, might be at once released, the Local Government Board had already supported this request and had suggested to the War Office that they should at once consider whether the American Red Cross Hospital at Mossley Hill might not serve the purposes of the military authorities. Mr. Leslie Scott asked what practical assistance the Local Government Board could offer to the port sanitary authorities of the country towards providing hospital accommodation for influenza, as urged by the Army Medical Council and the Local Government Board. Major Astor said that a conference had been arranged with representatives of the port authorities at which this question, amongst others, would be discussed.

Dogs Bill.—Sir F. Hanbury has reintroduced his Dogs' Protection Bill, and obtained a second reading on March 21st, when it was committed to a standing committee. Its object, he stated, was to prevent experiments for medical research on dogs.

Consumptive Service Men.—The reference to the Inter-departmental Committee regarding the treatment of consumptive service men, set up at the instance of Lieut.-Colonel Nathan Raw, is "to consider and report upon the immediate practical steps which should be taken for the provision of residential treatment for discharged soldiers and sailors suffering from pulmonary tuberculosis, and for their reintroduction into employment, especially on the land."

The Demobilization of Army Medical Officers and Nurses.—Asked by Mr. Leonard Lyle what were the latest orders issued for the demobilization of medical officers and nurses still attached to the army, Mr. Churchill said, on March 25th, that instructions had been issued that medical officers should be released from all theatres of war immediately it became possible to dispense with their services, and that the number employed should be reduced in proportion to the reduction in other arms as far as the large areas occupied, and the wide distribution of troops in enemy territory, permitted. Orders had also been issued that all nurses should be released immediately their services could be spared. During the last ten days considerable numbers of doctors and nurses had been demobilized. As regards those officers serving in India, the peace establishment, which was composed of regular army officers only, was being adjusted as quickly as circumstances permitted, and 100 regular officers were on their way or were awaiting early passage.

MENTAL AFTER-CARE ASSOCIATION.

THE annual meeting of the Mental After-Care Association, formed in 1879 to facilitate the readmission into social life of poor persons convalescent or recovered from institutions for the insane, was held under the presidency of Mr. Stanley Keith at Skinners' Hall, Dowgate Hill, on March 12th. Dr. Henry Rayner (Chairman) read the annual report for 1918. In commenting on it, he referred to the value of the society's work in preventing relapse by the tactful and kindly after-care of its agents, and to the important part played by the cottage homes in confirming convalescence and preparing discharged patients to resume a useful, if humble, part in the world's work. Suitable occupations and the needful equipment had been found for many who otherwise would have joined the ranks of the unemployed; amongst them were patients who had suffered from shell shock during the war. The number of patients that had been dealt with by the association during the year was 670; this was hardly one-tenth of the number annually discharged recovered from rate-supported asylums; there was, therefore, ample scope for extended operations did funds permit. The income in 1918 was £2,276.

The adoption of the report was moved by Dr. Norman Moore, President of the Royal College of Physicians of London, who recalled the varied stages of the treatment of the insane from the thirteenth century downwards, and seconded by Mr. A. H. Trevor, Commissioner of the Board of Control, who foreshadowed lunacy legislation promoted by the board to simplify the treatment of incipient mental disease. Speeches in support of the association were also made by the Hon. John Mansfield (Lord Chancellor's Visitor in Lunacy), Sir Rowland Blades, M.P., Mr. Gabain, Dr. Percy Smith, and Sir George Savage, M.D. The offices of the association are at Church House, Dean's Yard, Westminster.

MEDICAL SICKNESS, ANNUITY, AND LIFE ASSURANCE SOCIETY.

THE thirty-sixth annual general meeting of the Medical Sickness, Annuity, and Life Assurance Society was held at the offices of the society, 300, High Holborn, W.C., on March 25th. On the motion of Dr. MARTLEY, Dr. W. K. SIBLEY was appointed to preside in the absence of Dr. F. J. Allan, who was unavoidably detained elsewhere.

Dr. SIBLEY read the address prepared by Dr. Allan. It stated that the society, which had to draw its membership from one profession, had necessarily been considerably affected by the removal of large numbers of medical men from civil to military life, and by the fact that the number of men qualifying had been much reduced. For these reasons the number of new applications for membership had been fewer, while many of those remaining were at a higher average age period or graded as unfit for military service, with a consequent greater tendency to sickness. The strain of work on the profession had been particularly heavy, and the influenza coming on top of the war work had led to claims being made by 10 per cent. of the members for this disease, at a cost to the society of £3,600. The amount paid on claims of members invalided home on active service had increased year by year, and last year amounted to £4,177. There was no doubt that the effects of the war would be experienced for many years to come, and that a number of members would be permanently on the fund. It was therefore of the highest importance to have a substantial reserve of assets, inasmuch as claims on account of influenza continued to be fairly heavy. It was, however, encouraging to know that as demobilization was taking place applications for membership were being received in increasing numbers each week. The returns of medical students recently published showed that of the number of students registered 2,692 were women. This large prospective addition to the ranks of the medical profession, and the frequent application of women practitioners to become members of the society, had induced the committee after much consideration to prepare and submit to the meeting a scale of premiums for the admission of female members of the profession to the benefits of the society for sickness. The scheme was to a large extent experimental, and after it had been working for a reasonable period might have to be revised for entrants after that date. If the meeting agreed to the admission of women it would be necessary to make certain alterations in the by-laws. The greatest economy had been exercised in regard to the general expenses, which showed a reduction of £231 as compared with the previous year, but extraordinary expenditure had been incurred for the quinquennial valuation and the transfer of investments to the names of the new trustees. The committee, however, saw no reason to doubt that the expenses would be kept within the limits of the 10 per cent. allowed. Certain misconceptions still existed in the minds of a few members on the question of bonuses, due probably to the fact that those members had not taken the trouble to read the rules of the society. It should be clearly understood that no one insuring for sickness benefit was entitled to a bonus on reaching the age of 65. It was not until 1910 that the society was definitely empowered to grant bonuses, and then only under specified conditions and after a quinquennial valuation. There must then be a surplus over the amount required to meet liabilities and the actuary must advise that a distribution should be made. A bonus had thus been paid with the advice and approval of the actuary, and but for the abnormal conditions produced by the war a bonus would doubtless have been repeated last year. The actuary, however, took a strong view of the matter, and not only did not recommend it, but advised strongly against it on that occasion. The committee, therefore, had no option in the matter and had reluctantly to suspend the payment of bonuses during the next five years. No promise could be made, but there appeared no reason to doubt that a resumption of the distribution of the surplus might be permitted after the next valuation, and it might even be possible to make it retrospective since the assets of the society were invested almost entirely in funds the dividends of which were not liable to be affected by labour troubles.

The CHAIRMAN having replied to questions regarding certain items, the report of the committee and the audited accounts for the twelve months ending December 31st, 1918, were, on the motion of Dr. BALL, adopted.

It was decided to admit ladies to the membership of the society on the scale before the meeting and the necessary alterations to the rules of the society were agreed to. (Dr. Allan relieved Dr. Sibley of the chairmanship at this point.) The executive committee was re-elected with the addition of Mr. F. Swinford Edwards as a vice-president.

A vote of thanks was accorded to Dr. Sibley for presiding, and the proceedings terminated.

THE WAR.

CASUALTIES IN THE MEDICAL SERVICES.

ARMY.

Killed in Action.

CAPTAIN W. C. D. WILSON, R.A.M.C.(T.F.).

Captain William Charles Davidson Wilson, R.A.M.C. (T.F.), who had been reported as missing in the casualty list published on October 5th, 1918, was returned as killed in that of March 19th. He was educated at Aberdeen University, where he graduated M.B. and Ch.B. in 1915. He held a commission in the R.A.M.C.(T.F.), in the Second Highland Field Ambulance, attaining the rank of captain on February 12th, 1916.

CAPTAIN T. A. TOWNSEND, M.C., R.A.M.C.(T.F.).

Captain Thomas Ainsworth Townsend, R.A.M.C.(T.F.), who was reported as wounded and missing near Rocquigny, on March 24th, 1918, is now presumed killed on that date, aged 32. He was the only son of the late Thomas Sutton Townsend of Queen's Gate, S.W., and of Sutton Manor, Rugby, and was educated at Oxford, where he graduated B.A. in 1910, and at Guy's Hospital, taking the diplomas of M.R.C.S. and L.R.C.P.Lond. in 1914. After acting as house surgeon in the eye, ear, and throat department at Guy's Hospital, he went out to Serbia as surgeon to the British Red Cross. He took a commission as Captain R.A.M.C.(T.F.) in the 1st City of London Field Ambulance on December 25th, 1915, and at the time of his death was attached to the 1/20th Battalion of the London Regiment. He received the Military Cross on November 25th, 1916, and a bar thereto on February 18th, 1918, and also held the Serbian Order of St. Sava.

HONOURS.

C.B.E.

Lieut.-Colonel (temporary Colonel) Alfred Bertram Soltau, C.M.G., R.A.M.C.(T.F.), has been appointed a Commander of the Order of the British Empire (Military Division) for valuable services rendered in connexion with military operations in France and Flanders.

Scotland.

THE NEW CHAIR OF THERAPEUTICS IN THE UNIVERSITY OF EDINBURGH.

SPECULATION is rife regarding the occupant of the new chair of therapeutics in the University of Edinburgh, to the foundation of which reference was made in the JOURNAL on March 8th (p. 290). The conditions on which the chair can be held are in some respects novel. The new professor will have wards in the Royal Infirmary, but he will undertake not to engage in private practice. Since the salary is £1,100 a year, not so large a sum in purchasing power as it was before the war, the University Court may not, perhaps, have a large number of possible holders of the chair to choose between. We understand, however, that the holder of the appointment will not be debarred from acting, for instance, as medical adviser to one of the large insurance companies, and in this way adding substantially to his stipend. The absence of the worries and vicissitudes of private practice will be an inducement, since it will allow time for the prosecution of research and for its encouragement in others. The new teacher will be in close touch with the professor of pharmacology and

materia medica and with his laboratory, and so the experimental and the clinical sides of the work will be associated, with advantage to both. On the purely clinical aspects of the subject the professor of therapeutics would be able to gather together groups of cases for specialized study, and would have the facilities offered by the clinical laboratory in the Royal Infirmary, with the foundation of which the late Dr. George Gibson had so much to do. The appointment seems to offer many attractions to a man with a leaning towards research and teaching.

Graduate Medical Teaching in Glasgow.

For many years prior to the war post-graduate classes in medicine had been conducted at several of the hospitals in Glasgow, but no organized scheme was in operation whereby the teaching in the different hospitals might be correlated.

Early in 1914 the attention of the medical faculty of the university was directed to the subject, and on March 5th, 1914, at a largely attended and representative meeting of the medical teaching staffs of the university and other medical schools, and of the general and special hospitals of Glasgow, convened at the request of the medical faculty of the university, a committee was appointed to promote co-operation between the various bodies concerned. Information having been obtained as to the facilities for graduate study in the various hospitals in Glasgow, an executive committee was formed to complete arrangements and draw up a syllabus for the purpose of instituting a general scheme of post-graduate medical teaching early in 1915.

With the outbreak of the war in August, 1914, the scheme fell into abeyance, and nothing further was done until February, 1919, when, at a conference between the medical faculty of the university and the General Committee for Post-Graduate Medical Teaching, it was agreed to institute an emergency course of post-graduate medical teaching during the ensuing summer session particularly to meet the needs of graduates who have been on service. Arrangements have now been made to carry out such a course in medicine, surgery, obstetrics, and special subjects in various hospitals in Glasgow. The course, which will be clinical and practical, will be held during the months of May and June, 1919, and graduates may enrol for either or both months. Two schemes of teaching have been arranged:

Scheme A.—Graduates will be distributed among the clinics in the proportion of five or six to each, each graduate to have under his charge a certain number of beds, and to be responsible for the due investigation and recording of the cases, and for all special investigations in connexion with them, working directly under and along with the physician or surgeon in charge, and in connexion with the ordinary clinic.

Scheme B.—Special post-graduate classes for graduates alone.

No fee will be charged for instruction under Scheme A, but for the special classes under Scheme B an inclusive enrolment fee of 5 guineas for the two months' course, and of 2½ guineas for one month. For this fee graduates may attend as many classes as they wish.

Further particulars may be had on application to the Acting Secretary, General Committee for Post-Graduate Medical Teaching in Glasgow, Dr. A. M. Kennedy, Pathological Institute, Royal Infirmary, Glasgow.

As certain of the special classes under Scheme B may be limited in numbers, and as the appointments under Scheme A are also limited to six to eight to each clinic, graduates wishing to attend the course are advised to send their names to the acting secretary as soon as possible.

Ministry of Health.

The following statement, signed by Sir R. W. Philip, President, regarding the proposed Ministry of Health, has been put out by the Royal College of Physicians of Edinburgh:

The Royal College of Physicians notes with cordial approval the Government's action in giving a primary place to legislation in the interest of the health of the people.

The College learns with satisfaction that it is the intention of the Government to remove from the Ministry of Health Bill, 1919, the provisions relating to Scotland, and to introduce a measure establishing a separate Health Ministry for Scotland. The College expresses the earnest hope that the Scottish Bill will be proceeded with as soon as possible.

The College desires to emphasize the view that, whatever form the Ministry for Scotland may take, it is essential for the development of the Ministry that responsibility for the initiation and control of health measures applicable to Scotland should be vested ultimately in one official, specially appointed and responsible for this office only—whether as President or Vice-President of the Board of Health—who should be a Member of Parliament.

The College is of opinion that in constituting the Board regard should be had to the selection of its members on grounds of experience and interest in matters pertaining to health. This implies a larger medical membership than the Bill seems to contemplate. In view of the extent of the health interests involved, the proposed inclusion of one medical member is quite inadequate.

Further, in the selection of medical members, it is undesirable to require the possession of one or other special diploma. The members should be chosen on the ground of their capacity and experience in medicine.

With regard to the Consultative Councils to be erected (Clause 4), the College favours the proposal. Their establishment will tend to ensure the effective co-operation of the profession with the Ministry in the carrying out of preventive and curative measures conducive to the health of the people. The College strongly recommends that the medical members of the Consultative Council should be chosen by the medical profession.

Having regard to the extent and variety of questions which have arisen and will arise in connexion with a Ministry of Health, it is essential that these Consultative Councils should be really effective bodies, initiating as well as qualifying proposals, and that they should have ready access to the Minister.

The College believes that the establishment of such Consultative Councils will be found capable of further development locally, in connexion with the practical administration of the Measure.

Insurance and Highland Estimates.

The Civil Service Estimates indicate that the amount required in the year ending March 31st, 1920, for the expenses of the National Insurance Commission, Scotland, is £836,834, a net increase of £136,602 on the previous year. The largest increase is in the special grant in aid for medical benefit; this has increased by £53,500 to £218,000. The grants in aid for sickness, disablement, and maternity benefits show an increase of £52,650, raising the total to £314,450. The next largest increase is that in salaries, wages and allowances, from £47,782 to £69,434. There is also an increase of £2,000 in travelling expenses, to the total of £5,000, and an increase of £3,900 in medical and sanatorium benefits, raising them to £15,800.

The estimates of the amount required in the year ending March 31st, 1920, for the Islands and Highlands Medical Service Board, and for the grant in aid of the Islands and Highlands Medical Service is £43,993; of this amount £42,000 is for the special grant and other purposes connected therewith. The amount is the same as in 1918–19. Technically the grant is only authorized by Parliament to December 31st, 1919, but the Secretary of State for Scotland implied the other day that it would be continued, and that the transfer of powers to the Minister of Health would not affect this specific appropriation.

Scottish Hospitals at Rouen.

A pamphlet entitled *Appeal and Case for Members of the Nursing Staff of the Scottish Red Cross Hospitals, Rouen*, has been prepared by Mr. G. W. Wilton, Advocate of Edinburgh, and issued as an address to the Scottish Branch of the British Red Cross Society. We do not intend to express any opinion on the merits of the case, but it is clear that the nursing staff of the hospital was not happy, and that the V.A.D.'s, or some of them, shared the unhappiness of the sisters. Fortunately there is ample evidence that the work of the hospital did not suffer. The D.D.M.S. Rouen base reported on February 10th, 1918, after the troubles had come to a climax, that he had not observed any falling off in the efficiency of the unit. "The wards are excellently kept and the patients well looked after; in fact, this section is up to, if not superior to, the standard of any unit in Rouen." From the point of view of the public and the medical profession this is the essential fact. The nursing sisters must have had the larger share in attaining this standard; and if, as is evident, they are labouring under a sense of injustice, it would appear proper that the public inquiry for which they ask should be granted.

Correspondence.

HOSPITAL TEACHING UNITS.

SIR,—I quite agree with all you so kindly say in praise of me. It is excellent reading, and makes me feel quite capable of doing much more mischief yet. But I wish, please, your permission to say that in putting before the governors of the London Hospital the scheme of trying some "whole-time units" I had no intention whatever of "handling the matter so deftly as to lead the public to think that the London Hospital alone contemplated such a change." I knew that University Hospital already had one such unit and was very immediately contemplating another, and that other hospitals were considering it.

In all my hospital life I have always avoided comparing the work of "The London" with that of any other hospital, except when I have swaggered a little, for begging purposes, about its being the largest. It is the duty of all hospital managers to work in harmony with each other, and I should indeed "pull the strings of the shower bath" if I were to put the London on a pedestal and point at it.

As I am "on my legs," may I once more emphasize what I said at that meeting, and you in your article note, that this change to putting some of the work under whole-time units is the joint conclusion of the House Committee and medical staff, and does not emanate from me more than the others? Moreover, there is not a dissentient voice amongst the members of either body.—I am, etc.,

London Hospital, E., March 24th. KNUTSFORD.

URETERS AND THEIR ORIFICES IN GUNSHOT WOUNDS OF THE SPINE.

SIR,—Colonel Sargent's letter prompts me to state that a detailed account will shortly be published of an attempt to ascertain the value of treating retention of urine in cases of spinal injury by expression of the bladder or by allowing passive overflow to take place. The investigation was carried out in France by Major P. N. Vellacott, and the fact that his paper was in the press made me refrain from taking part in the discussion which has been going on in your columns. When this account is published it will be seen that the condition of the urinary tract in these cases was receiving careful consideration and that a serious attempt was being made to establish whether the methods of expression and passive overflow were really better than catheterization. My own belief is that these methods have very great advantages over treatment by catheterization, but the details of the series of cases will soon be available so that each may judge for himself.

No observations were made of the ureteric orifices in this series of cases, as we were very doubtful whether any useful information could be gained by the examination. We were of opinion that in septic cases the examination would be of little value, while in clean cases it was not justifiable. The condition of the ureteric orifices seemed to us to be of small significance, and did not weigh with us in deciding to have the investigation carried out. What did make us hopeful of good results were the encouraging accounts given by American surgeons who had tried these methods of treatment.

Infection of the urinary tract may undoubtedly occur in these cases apart from catheterization, as will be seen when Major Vellacott's paper is published.—I am, etc.,

London, W., March 25th. A. E. WEBB-JOHNSON.

SIR,—It would be a comfortable view to hold, as Colonel Sargent apparently would wish us, that the fulminating alkaline cystitis which spreads with such rapidity to the kidneys and in a few months causes the death of one in three cases of paraplegia is due to the spontaneous development of cystitis and not to infection borne by the catheter. Unfortunately, in the cases of which I have personal knowledge, the catheter had always been passed and the type of cystitis—a virulent haemorrhagic form with alkaline decomposition of the urine, and a mixed bacterial content with the streptococcus and staphylococcus predominating—was just the type of cystitis that is accepted as due to catheter infection. It would be interesting to hear that this mixed infection developed spontaneously in the paraplegic bladder. Colonel Sargent is silent on this point, and until we have some more convincing proof that this occurs I suggest that the use of the term "catheter infection" is appropriate in these cases.

Colonel Sargent proceeds to discuss the treatment of cystitis in the paraplegic bladder. Throughout this correspondence confusion has persistently arisen between cystotomy for cystitis and cystotomy as a prophylactic measure, and it seems to me necessary once more to state my position in regard to this matter.

I recommended cystotomy with complete exclusion of the catheter as a means of preventing the development of ascending pyelonephritis, my view being that the ascending infection resulted from recurrent distension of an infected bladder between the catheter evacuations. Further, I pointed out that there were two stages in almost all cases: (1) A stage of complete retention; (2) a stage of periodic reflex micturition which usually became permanent. The average duration of this first stage was sixty days, and the bladder should be drained during this period and allowed to heal when the second stage developed. This line of treatment has nothing in common with cystotomy for the drainage of an infected bladder already complicated by pyelonephritis.

Colonel Sargent explains the practical difficulties of nursing cases of cystotomy of which Colonel Fullerton wrote. The patient "who is being passed down the line from hospital to hospital has a leaking suprapubic opening from which the urine flows over his hips and soaks the bedding." Certainly a most objectionable state of affairs, and one certain to produce bedsores. But may I, without hurting anyone's feelings, ask why the patient has a leaking wound? Was the watertight suprapubic tube, which would drain into a bottle between the thighs, removed, or was the surgeon unable to produce a watertight suprapubic drain? Just recently I have met with a case in which the tube was removed for the train journey, and I have been wondering ever since why this was done.

My statement in regard to massage of the bladder in the hands of American surgeons was based on the account in the *Manual of Military Urology* compiled by Colonel Hugh H. Young (of Johns Hopkins University) and published for the American Expeditionary Force, on conversations with Colonel Young, and on Major Besley's article published in 1917.—I am, etc.,

London, W., March 25th. J. W. THOMSON WALKER.

HAEMORRHAGIC SPINAL EFFUSIONS.

SIR,—I was much interested in Colonel W. P. S. Branson's article published on p. 337–8 of your last issue, and would like to suggest that a possible diagnosis in his two cases was "partial rupture of an intracranial aneurysm of the posterior cranial fossa."

His two patients complained of an illness with a sudden onset, accompanied by extreme frontal headache, vomiting, and stiffness of the neck, and in their spinal fluid red and white blood cells in great excess were found.

In an investigation carried out at the London Hospital between the years 1907 and 1913, Turnbull and I[1] found in 0.80 per cent. of examinations of the head one or more intracranial aneurysm, none of which had a syphilitic origin. A common history in these cases was of one or more seizures, each accompanied by intense headache, vomiting, and the appearance of blood cells in the cerebro-spinal fluid.—I am, etc.,

London, W., March 25th. EDWIN G. FEARNSIDES.

THE NOGUCHI METHOD OF CULTIVATION.

SIR,—To avoid the possibility of misunderstanding, I desire to amplify a, perhaps, obscure paragraph in my obituary notice of the late Major H. G. Gibson, R.A.M.C., published in the BRITISH MEDICAL JOURNAL of March 8th, 1919.

Referring to the cultivation, by the Noguchi technique, of a minute filter-passing coccus, I stated that the independent findings of Majors Gibson and Bowman and Captain Connor had been confirmed by the work of Captain J. A. Wilson, R.A.M.C., a note on which was published by Sir John Rose Bradford, Captain Bashford, and Captain J. A. Wilson in the BRITISH MEDICAL JOURNAL and the *Lancet* of February 1st, 1919.

This paragraph, though intended merely to show that

[1] *Brain*, xxxix, 1916, 224.

similar findings, mutually confirmatory, had been arrived at independently by two groups of investigators, has been construed as an implication that priority was claimed by me for Majors Gibson and Bowman and Captain Connor. No such implication was intended. Though Captain Wilson's work was not considered by Sir John Rose Bradford to be sufficiently complete to justify publication until the latter part of January, 1919, this officer had been successful in making "Noguchi" cultures of what appears to have been the same organism some months before this was done by Gibson, Bowman, and Connor.

At the same time, full credit for independent and original work must be given to the latter workers, who were unaware that the "Noguchi" technique had already been employed in culture work in influenza. As the paragraph in question has already given rise to misunderstanding, I hope that, in justice to Captain J. A. Wilson, this letter may be given early publicity.—I am, etc,,

S. L. CUMMINS, Colonel A.M.S.,
Adviser in Pathology, B.E.F., France.

March 19th.

MEDICAL RECONSTRUCTION.

SIR,—The profession is about to be reformed, and in its own interest and reputation had better assist. The nation desires disease prevention, and, when that is impossible, its efficient treatment. The present system is, the more disease the more money for the trade; prevention and efficiency would interfere with trade profits; the profession should shut up shop.

The easiest road to a national health service is by an extension of the insurance service. In connexion with hospitals it is time to abolish charity and honorary staffs. The working classes do not exist for the purpose of providing experience to be utilized for the benefit of the rich. Citizen hospitals should be the nuclei of local medical services. Opportunity for efficiency must be available for all doctors. The popularity of the service will depend on its efficiency. Doctors lack time off and pensions. Down with trading, up with science.

Let us have unity in the profession, by the British Medical Association and the Medico-Political Union joining together—the one for science, and the other for professional unionism.—I am, etc.,

Wigan, March 24th. FERDINAND REES, M.D.

THE COUNCIL OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

SIR,—I am standing as a candidate for the Council of the Royal College of Surgeons of England in the interests of general practitioners. I am a Fellow in general practice, and feel that at the present time it would be a help to the College and to the medical profession to have someone on the council who had a knowledge of general practice.

I am quite independent and belong to no association.—I am, etc.,

London, W., March 24th. J. F. JENNINGS, F.R.C.S.

The Services.

ACTING RANK AND GRATUITIES.

IN the SUPPLEMENTS of January 4th and January 18th, 1919, we drew attention to the injustice caused to many Territorial medical officers by first changing their higher temporary rank to equivalent acting rank, and then prescribing by Army Order that acting rank would not count in the assessment of gratuity. We are very glad to be able to state that this grievance has now been removed.

An Army Order dated March 11th, 1919, lays down that for the assessment both of the gratuity under Article 497 of the Pay Warrant and of the war gratuity under Army Order IV of February 11th, 1919, officers will be granted the benefit of any acting rank held by them at any period during their service subject to the following conditions:

(*a*) That such acting rank has been held during the present war for an aggregate period of not less than 182 days, and has not been relinquished owing to misconduct or causes within the officer's own control; or

(*b*) That such acting rank, or the pay thereof, under A.C.I. 1251 of 1917, was relinquished owing to a wound received in and by military service; or

(*c*) That the officer became non-effective owing to a disability caused or aggravated, in the first instance, by military service while holding such acting rank.

If the acting rank held by an officer has varied during the period or periods which render him eligible for the gratuity under (*a*), any period less that 182 days in a higher rank will count towards the 182 days' qualifying period in the next or lower rank. Unpaid acting rank does not entitle an officer to a higher rate of gratuity. Where an officer receives permission to retain higher rank than the temporary or substantive rank held by him at the date of the termination of his service, the gratuity will be assessed on the basis of such higher rank. Officers entitled to gratuity at a higher rate under the conditions laid down in (*a*) must submit a claim to the agent or paymaster, supported by a certificate showing the periods during which they held the acting rank in respect of which the higher rate is claimed. Officers wishing to claim gratuity at a higher rate under (*b*) or (*c*) must apply direct to the Secretary, War Office (Accounts, 1, Agents) supporting their claim by full particulars.

It will be seen that the new Army Order applies to many other R.A.M.C. officers beyond those of the Territorial Force whose case was dealt with in our previous articles.

NAVAL GRATUITIES.

The British Medical Association is informed by the Accountant-General of the Navy that approval has now been given for the payment to Temporary Surgeon Lieutenants, R.N., of a naval discharge gratuity of £60 for each year's service, or part of a year's service, subject to a minimum of two months' pay (£67 2s.) as provided for in existing regulations.

Obituary.

W. VICARY SNOW, M.D., F.R.C.P.LOND.,

Consulting Physician, Royal Victoria Hospital, Bournemouth.

DR. VICARY SNOW, who died on March 10th at the age of 78, was one of the makers of Bournemouth as a health resort, and was a prominent figure in the professional life of Dorsetshire. He studied medicine at University College, which then had a teaching staff of exceptional brilliancy. He took the diploma of M.R.C.S. in 1864, graduated M.B.Lond. with honours in 1865, and M.D. in 1866. He was admitted M.R.C.P.Lond. in 1870, and was elected a Fellow in 1899. He served the office of house-physician at University College Hospital, and was for some time resident medical officer of the Kent County Ophthalmic Hospital. He then settled at Bournemouth, where for many years he had a large practice. He was consulting physician to the Royal National Sanatorium for Consumption and Diseases of the Chest. He was a recognized authority on pulmonary tuberculosis, and his opinion on chest cases was highly valued by his colleagues. He was the author of publications on the contagiosity of phthisis (BRITISH MEDICAL JOURNAL, 1884); the treatment of consumption (1891); and the climatic treatment of consumption and the open-air treatment of phthisis (*Transactions of the British Congress on Tuberculosis*, 1901). He was a president of the British Balneological and Climatological Society. He retired from practice a few years ago.

Dr. Snow was a past-president of the Dorset and West Hants Branch of the Association, and to the end of his life took the keenest interest in its progress and prosperity. He was president of the Therapeutic Section at the annual meeting of 1891. He was a man of simple and somewhat reserved manner, with a lofty ideal of professional dignity. He never deviated from what he considered the right path.

Dr. JOHNSON SMYTH, who represented the Council of the Association at his funeral, writes: "Dr. Snow had the rare gift of maintaining friendships with those from whom he differed most keenly in things medical. The younger men here really regarded him with veneration, and they spoke of him as 'Dear old Snow.' He attained high honour in the profession of his choice, but in any profession his high intelligence and industry would have carried him to a high place. His brethren at Bournemouth are the poorer for his loss."

T. V. DE DENNE, M.R.C.S., L.R.C.P.,

Sidmouth.

THOMAS VINCENT DE DENNE, who died on March 17th, was the third son of Mr. W. Denne, F.R.C.S, well known for many years as the first medical superintendent of the Three Counties Asylum, Arlesey, Bedfordshire. The son received his early education at Bedford Grammar School.

In 1864 he entered St. Thomas's Hospital Medical School, then at the old Surrey Gardens, in Newington. The school was small, and carried on with difficulty, but there was a powerful staff, among them Risdon Bennett, Peacock, and Bristowe, Solly, Le Gros Clark, and Simon. He took the diploma of M.R.C.S.Eng. in 1868, and that of L.R.C.P.Edin. in 1870. After holding lunacy appointments, for some time being assistant medical officer at St. Andrews, Northampton, he went into practice with the late Dr. Hugh Kerr of Halesowen and Cradley Heath. Here it was he did his life's work. For nearly a quarter of a century he worked as hard as a man could work. It is not too much to say that he gained the good will and esteem of all. He was a charming personality, and always held high the honour of his profession. In 1904 he moved to Sidmouth, and practised there with great success until 1918, when ill health (heart trouble) compelled him to retire. He may truly be said to have died in harness, having worked with his successor Dr. Spence-Bernard up to December last. When he died he was on a visit to his brother-in-law Mr. George C. Franklin at Fareham. He was laid to rest in the cemetery there on March 20th amid the keen regrets of loving relatives. At the same time a memorial service, largely attended, was held at the parish church at Sidmouth. De Denne was a good and consistent churchman, and acted for many years as churchwarden at Cradley, and afterwards at Sidmouth.

He leaves a widow, two sons—Lieutenant Henry de Denne, R.N.R., and Paymaster Lieutenant Commander Cecil de Denne, R.N.—and two daughters. The youngest son, Sublieutenant Geoffrey de Denne, Devonshire Regiment, was killed in France on October 4th, 1917.

DR. ERNEST FRANK SYRETT, of Dovercourt, died after a brief but painful illness on February 20th. He was born at Ramsgate in 1869, and was educated at Maidstone. He studied medicine at St. Bartholomew's Hospital and obtained the London Conjoint diplomas in 1891 and the M.B. and B.S. degrees at Durham University in 1893, proceeding to the M.D. degree two years later. After holding the post of resident medical officer to the Fleming Memorial Hospital for Sick Children at Newcastle-on-Tyne, he served for a short period as a medical officer in the Peninsular and Oriental Line. Subsequently he practised first at Nayland, near Colchester, and later at Dovercourt, where he held most of the public medical appointments, including that of M.O.H. for the borough of Harwich. Dr. Syrett was typically an able country general practitioner. Quick at absorbing knowledge and ready in applying it, he was also very competent in organizing his work. In this way he was able to carry on a wide general practice in addition to performing satisfactorily the duties connected with his numerous public appointments. His services in connexion with the war hospitals and other military matters at the fortified town of Harwich had obtained for him the friendship and respect of the naval and military authorities. He was extremely popular with his patients, and his popularity was increased in private life by his keenness as a sportsman. He married in 1899 Maude, elder daughter of the Rev. J. D. Gray, M.A., and leaves a widow and three children.

Universities and Colleges.

UNIVERSITY OF LIVERPOOL.

AT a congregation held on March 20th the following degrees were conferred:

M.D. *(in absentia)*.—S. F. Linton.
M.B., CH.B.—S. D. McAusland (with honours, Class I), W. T. Davies, P. E. Gorst, R. R. B. Roberts.

UNIVERSITY OF MANCHESTER.

THE Diploma in Public Health has been granted to Dr. James Walker.

The following candidates have been approved at the examinations indicated:

THIRD M.B. AND CH.B. (*General Pathology and Morbid Anatomy*).—S. Almond, Martha F. Barritt, Phyllis M. Congdon, Margaret McF. Corbold, Dorothy M. L. Dyson, A. M. El-Aguizy, P. Fildes, J. Harris, E. Jones, Gertrude B. Leigh, H. A. Lomax, A. Maude, J. S. Robinson, Annie Rothwell, G. Talbot, S. J. Woodall.

D.P.H.—(*Part I*): A. W. Baker, G. H. T. N. Clarke, G. J. Crawford, A. Heath, M. E. A. Latif, J. L. Meynell, E. N. Ramsbottom, H. F. Sheldon, E. H. Walker. (*Part II*): J. Walker.

UNIVERSITY OF LEEDS.

THE Council of the University of Leeds on March 20th conferred upon Dr. J. B. Hellier, late Professor of Obstetrics, the status of Emeritus Professor.

UNIVERSITY OF DUBLIN.

THE Senate of the University of Dublin has unanimously resolved to confer the honorary degree of Doctor of Medicine upon the following members of the university in recognition of their services in the war: Major-General Sir J. Murray Irwin, D.M.S., Third Army; Major-General H. M. Thompson, D.M.S., First Army; Major-General W. T. Swan, D.M.S., Palestine; Major-General J. J. Gerrard, D.M.S., Fifth Army; Major-General F. R. Newland, D.M.S., Italy; Major-General J. J. Russell, D.D.M.S., Irish Command, formerly D.D.M.S., Rouen.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

AT a special meeting of the President and Fellows of the Royal College of Physicians of Ireland on March 14th Major Harold Pringle, R.A.M.C., M.D., F.R.C.S.I., Chief Assistant to the Professor of Physiology, and Lecturer in Histology, University of Edinburgh, was elected King's Professor of Institutes of Medicine in the School of Physic in Ireland.

Medical News.

AT the graduation ceremony of the University of Aberdeen on March 25th Sir James Galloway, K.B.E., M.D., F.R.C.P., formerly consulting physician with the British armies in France, was admitted to the honorary degree of LL.D.

IN the march of the Guards through London on Saturday, March 22nd, the following representatives of the Guards Division, R.A.M.C., took part: Colonel H. B. Fawcus, C.M.G., D.S.O., Assistant Director of Medical Services, Major J. F. Sandison, D.A.D.M.S., and one officer and ten other ranks from each of the three field ambulances of the Division—namely, the 3rd, 4th, and 9th Field Ambulances.

A DISCUSSION on the elimination of insanitary areas will be opened by Dr. F. E. Wynne (M.O.H. Wigan) at a meeting of the Royal Sanitary Institute, at St. Helens, on the evening of Friday, April 4th.

MAJOR-GENERAL SIR ROBERT JONES, C.B., F.R.C.S., lecturer in orthopaedic surgery, Liverpool University, has consented to act as honorary consultant to the Ministry of Pensions for orthopaedic cases.

COLONEL W. H. WILLCOX, C.B., C.M.G., will deliver the Lettsomian Lectures before the Medical Society of London on "Jaundice" on April 28th, April 30th, and May 2nd, at 11, Chandos Street, Cavendish Square, W.1, at 9 p.m. on each day.

DR. H. H. DALE, F.R.S., and Colonel W. THORNE, M.P., have been appointed members of the Central Control Board (Liquor Traffic) in succession to Sir George Newman and Mr. Philip Snowden, respectively, who have resigned.

IN the Ecole des Infirmières, Brussels, of which Miss Edith Cavell was the principal, a portrait plaque has been placed alongside a medallion of Madame Depage, so well known to British surgeons as the wife of the secretary of the International Surgical Society.

THE Society of Medical Sciences of the Grand Duchy of Luxembourg at a recent meeting unanimously passed a resolution in favour of the reorganization of medical studies on French lines. The society at the same time expressed its sympathy with the French profession, particularly in Alsace and Lorraine.

THE forty-third anniversary of the opening of the Johns Hopkins Medical School was celebrated with appropriate rites on February 22nd. An address was delivered by Dr. George E. Vincent, president of the Rockefeller Foundation, New York.

THE Lord Chancellor has sanctioned the reappointment by Dr. Waldo, His Majesty's Coroner for the City and Borough of Southwark, of Major Danford Thomas to act as his deputy. Major Thomas rejoined the Territorials in 1914, and was gazetted to the 7th Battalion, London Regiment, and has served in France during the last three years of the war.

AT Belfast Assizes, before Mr. Justice Dodd, on March 24th, Nathaniel Osborne McConnell, M.B., B.S., R.U.I., a Belfast medical practitioner, was found guilty of the murder of Mary Jane Reid, whose death it was alleged was the result of an illegal operation. The jury added a strong recommendation to mercy. Sentence of death was passed by the judge.

THE Brazilian Medical Commission, the head of which is Dr. Nabuco de Gouvea, rendered considerable service to the Allies in Europe. On arrival at the port of Dakar, French West Africa, all the fifty members were severely attacked by influenza, and many died.

AT the request of the National Council for Combating Venereal Diseases, the London School of Medicine for Women has, in conjunction with the Royal Free Hospital, the Elizabeth Garrett Anderson Hospital, and the London Lock Hospital, arranged a course for the instruction of qualified medical women in the treatment of venereal diseases. The fee for the course, which will begin on Monday, May 19th, and end on May 31st, is £5 5s. Further particulars can be obtained on application to the Warden and Secretary, London School of Medicine for Women, 8, Hunter Street, W.C.1.

IN the *London Gazette* of March 21st an Order was published signed by the Home Secretary stating that he is satisfied, as the result of an inquiry conducted by the Certificates of Naturalization (Revocation) Committee, that Ludwig Freyberger, to whom a certificate of naturalization was granted in 1897, has shown himself by act and speech to be disaffected and disloyal to His Majesty. The Home Secretary accordingly revokes the said certificate as from March 6th, 1919, and orders it to be given up and cancelled. (The name of Ludwig Freyberger appears in the current issue of the *Medical Register* with the qualifications M.R.C.S.Eng. 1893, L. 1893, M. 1894, R.C.P. London.)

AT the annual meeting of the National Hospital for the Paralysed and Epileptic, Queen Square, London, it was stated that throughout the war seventy beds had been provided for soldiers suffering from nerve injuries and affections, and that this work was being followed up by special provision, in three branch hospitals, for discharged men, in connexion with the Ministry of Pensions. The Massage School, managed in conjunction with University College Hospital, had a prosperous year in 1918, and awarded seventy-eight certificates. The new hostel in connexion with the school proved most successful. The expenditure of the hospital and its Finchley branch increased from £19,108 in 1914 to £30,230 in 1918.

AN agreement signed in Paris on November 26th, 1918, has now been published by the British Foreign Office. Under it the Imperial War Graves Commission is recognized as the only British organization having the task of caring for British soldiers' graves in France. The land for the cemeteries has been purchased by the French Government and presented to the British. In a limited number of instances of isolated graves the bodies will be transferred to the cemeteries. The Commission is represented in France by a mixed commission, French and British. Provision for the care of graves in French communal cemeteries will be subject to French laws and regulations. The erection of monuments is subject to the control of the Imperial Commission.

A FRENCH Medical Congress of Syria was held recently at Beyrouth under the presidency of Professor de Brun, Dean of the Faculty. Among those who took part in the proceedings, in addition to the representatives of the local faculty, were Professors Lépine of Lyons and Alezais and Silhol of Marseilles. The Congress passed a resolution inviting France to organize an official system of gratuitous medical assistance in Syria and Palestine, helping the development of existing institutions while respecting rights already acquired. The Faculty of Beyrouth had at the beginning of the war eleven professors and twelve *chefs de clinique*, with 320 students. All the latter were orientals.

THE annual report of the Florence Nightingale Hospital for Gentlewomen at 19, Lisson Grove, N.W. (formerly the Hospital for Invalid Gentlewomen) shows that the number of patients treated during 1918 was 460; of these 329 were discharged cured. The number of operations was 403. A large proportion of the patients were connected with officers of the navy, army, and air force, and 27.5 per cent. were recommended by the Officers' Family Fund. Many of the other patients admitted were relatives of members of various other professions. The committee offers its thanks to the physicians and surgeons who generously devoted their time and skill to the service of the patients. Members of the staffs of general London hospitals, of the Samaritan Hospital for Women, Grosvenor, Soho, Chelsea, New, and South London Hospitals may recommend patients who are eligible for admission and take charge of them, provided that their medical attendance is gratuitous. It is optional for the surgeon to select his own anaesthetist.

Letters, Notes, and Answers.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

The postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2631, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin.

The address of the Central Medical War Committee for England and Wales is 429, Strand, London, W.C.2; that of the Reference Committee of the Royal Colleges in London is the Examination Hall, 8, Queen Square, Bloomsbury, W.C.1; and that of the Scottish Medical Service Emergency Committee is Royal College of Physicians, Edinburgh.

LETTERS, NOTES, ETC.

"M.O." asks whether the Italian "War Zone" ribbon has been granted to officers and other ranks who served on the Italian front.

SERVICE IN MALTA.

"VOLUNTEER 1914" writes: The 1914–1915 Star is being given to all engaged in any theatre of war on those dates who are not already in possession of the Mons Star. It is not to be given to those who served in Malta in 1914–15, or in some hospital ships in the Mediterranean during that time. Malta was an oversea base, for the reception of sick and wounded from Gallipoli, just as Alexandria and Cairo were, and had as much or as little of the atmosphere of war as these latter places. Many medical officers were dispatched to Malta in 1914–15 in spite of their requests to be allowed to serve elsewhere, but this fact that they were early volunteers and not conscripts is not to be recognized by the War Office in any way. Is this strictly fair?

"R.A.M.C.(T.C.)" writes to the same effect, adding that Malta was a hotbed of dysentery and enteric fever during the summer of 1915.

CALOMEL CREAM.

IN response to inquiries, we give below a model specification which may be found convenient in ordering calomel cream:

Filled Tubes of Calomel Cream.

Levigated calomel ...	...	4 parts by weight
Liquid paraffin (*B.P.*)	...	1 part ,,
Hydrous wool fat (*B.P.*)	...	7 parts ,,

To be filled into a collapsible tube of pure tin, size $\frac{3}{4}$ in. by $1\frac{1}{2}$ in., with elongated nozzle about $\frac{1}{2}$ in. long, $\frac{5}{32}$ in. diameter, parallel for two-thirds of its length from neck, but having a curved taper for the terminal one-third. The cap to slip slightly over the nozzle and to be secured by an indentation near its base, or by the edge of the cap being burred into a shallow groove at the base of the nozzle; the cap to be sufficiently firmly fixed to resist pressure of filling, but to be easily removed when the calomel cream is required for use. All parts of the nozzle to be quite smooth and free from sharp edges. Each tube to contain 35 to 40 grains of the cream, and to be packed in a small stiff cardboard box.

THE ETIOLOGY OF INFLUENZA.

A Correction.

IN the paper under the above heading, by Gibson, Bowman, and Connor, published in the JOURNAL of March 22nd, on page 334 (col. 1, line 32), for 1 μ to 2 μ read 0.1 μ to 0.2 μ.

THE following appointments of certifying factory surgeons are vacant: Thorne (Yorks, West Riding), New Southgate (Middlesex).

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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Seven lines and under	0	6	0
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NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.